

ITEM:

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SUBJECT:

**Discharges from Irrigated Lands, Conditional Waiver of Waste Discharge Requirements (Resolution No. R5-2002-0201, Resolution No. R5-2002-0228) Continuance of the 24 April 2003 Board Meeting—**  
*Consideration of Alternatives to Regulation of Discharges from Irrigated Lands, including continuing the use of, adoption of revisions to, rescission or readoption of the Conditional Waiver, or directing staff to take related actions*

BOARD ACTION

Consideration of one or a combination of the following actions:

**A. If the Board, in the previous agenda item, HAS RESCINDED the Waiver and Negative Declaration adopted in December 2002, then the Board will consider one or a combination of the following actions:**

1. *No Action: If no action, then Resolution No. R5-2002-0228 adopting the Negative Declaration and Resolution No. R5-2002-0201 adopting the Conditional Waiver on 5 December 2002 are no longer in effect; or*
2. *Re-adopt the Negative Declaration and/or Conditional Waiver that were adopted 5 December 2002; or*
3. *One of the actions under C. below.*

**B. If the Board, in the previous agenda item, HAS NOT RESCINDED the Waiver and Negative Declaration adopted in December 2002, then the Board will consider one or a combination of the following actions:**

1. *No Action: If no action, then Resolution No. R5-2002-0228 adopting the Negative Declaration and Resolution No. R5-2002-0201 adopting the Conditional Waiver on 5 December 2002 remain in effect; or*
2. *Rescind the Negative Declaration and/or Conditional Waiver that were adopted 5 December 2002; or*
3. *One of the actions under C. below.*

**C. The Board may also consider one or a combination of the following actions:**

1. *Direct staff to revise Resolution No. R5-2002-0201 adopting the Conditional Waiver on 5 December 2002 and/or to prepare and to circulate a new environmental document for consideration at a later Regional Board meeting; or*

2. *Adopt the revised Conditional Waiver and/or Negative Declaration that were prepared for Board consideration at the April 2003 Board Meeting; or*
3. *Adopt a revised Conditional Waiver and CEQA documents that consider written and oral comments received up to and including the July 10/11 Regional Board hearing; or*
4. *Direct staff to re-circulate for additional public comment, and for consideration at a later Regional Board hearing, a Conditional Waiver and CEQA documents that were prepared based on comments received up through 10, 11 July 2003 Regional Board hearing; or*
5. *Direct staff to take other related actions.*

## BACKGROUND

The Regional Board adopted a Conditional Waiver of Waste Discharge Requirements (Conditional Waiver) for discharges from irrigated lands at its December 2002 meeting. During this meeting, the Regional Board directed staff to address comments and questions from Board members and interested parties, including two letters submitted by a coalition of environmental interests and a coalition of agricultural interests and water agencies. Staff was directed synthesize the spectrum of comments and questions into key issues, to analyze these issues, and present options and recommendations that could address them at the April 2003 Board meeting.

On 17 April 2003, the Board chair extended the comment period to 23 May 2003 and continued the hearing until the 10/11 July 2003 Board meeting. The Regional Board held a public meeting on 24 April 2003 to hear oral testimony of staff and interested parties. At the July public meeting, the Board will consider written comments on the Conditional Waiver, hear additional oral testimony and can take further action as described above.

## ISSUES

The following are questions or comments discussed in the April 2003 staff report that are critical for addressing Conditional Waiver issues:

- 1) Should the **goal** of the Conditional Waiver be restated?
- 2) How should Dischargers be **identified**?
- 3) Should the Dischargers pay **fees**?
- 4) Should the discussion of **prioritization** be revised or removed?
- 5) Should **management practice** development, evaluation, tracking and enforcement of implementation of Watershed Group management practices be revised in the Conditional Waiver?
- 6) Should the Conditional Waiver be revised to provide additional detail on which **reports** will be reviewed and approved by the Regional Board?
- 7) Should the Conditional Waiver for watershed programs require **water quality management plans** from every individual?
- 8) Should the Conditional Waiver specify that the watershed monitoring

programs include **pollutants of concern to drinking water providers**?

- 9) Should the Conditional Waiver require that the **watershed plan be updated annually**?
- 10) Should **managed wetlands** be considered irrigated agriculture?
- 11) Should discharges from **rice acreage** not specifically addressed by the Rice Pesticide Program be eligible for coverage by the Conditional Waiver?
- 12) Should the Conditional Waiver be revised to provide additional detail on the criteria that must be met by the **monitoring program**, including whether bioassessment can be included in monitoring plans and whether load reductions must be estimated and monitored?

In addition, based on testimony given at the 24 April 2003 Board meeting, the Board passed a motion that directed staff to:

- 1) Work with principal interested parties to develop phased monitoring and quality assurance programs that are scientifically defensible;
- 2) Work with principal interested parties to devise a mechanism for identifying those who are not participating in the waiver, but should be participating;
- 3) Not consider a fee schedule at this time, and instead work with State Board and principal interested parties to develop funding for shorter term requirements and a strategy for long term funding; and
- 4) Work with principal interested parties to develop a workable definition for a watershed group.

Mgmt. Review \_\_\_\_\_

Legal Review \_\_\_\_\_

10-11 July 2003 Region 5 Board Meeting

CVRWQCB

3443 Routier Rd., Suite A  
Sacramento, CA 95827

**Staff Report**

**Conditional Waiver of Waste Discharge Requirements  
For  
Discharges from Irrigated Lands**

**10/11 July 2003**

**I. Introduction**

**December 2002 Adoption of a Conditional Waiver**

On 5 December 2002 the Regional Water Quality Control Board, Central Valley Region (Regional Board) adopted a “Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands” (2002 Conditional Waiver). During the hearing, the Regional Board also requested staff to provide, at a later Regional Board meeting, an analysis of comments received regarding the 2002 Conditional Waiver, including issues raised in two letters submitted by: (1) a coalition of environmental interests, and (2) a coalition of agricultural interests and water agencies. The Regional Board asked staff to present a discussion of the issues, evaluate alternatives to addressing issues raised, and make recommendations for revisions to the 2002 Conditional Waiver for consideration by the Regional Board at the March 2003 Regional Board meeting. Based on requests by interested persons, consideration by the Regional Board was postponed until the April Regional Board meeting.

On 6 December 2002, due to the numerous issues raised by a broad spectrum of interests and lack of time for a full analysis of these issues, the Regional Board voted on a motion to rescind the waiver. The motion failed on a three-to-three vote.

**The April Agenda Package**

As directed by the Regional Board, staff considered issues raised by all interests. Staff proposed revisions, taking the form of a proposed Conditional Waiver Order and Monitoring and Reporting Programs (MRP), developed with the intent of addressing issues, ensuring compliance with Division 7 of the California Water Code (CWC) and waiver conditions, and ensuring the scientific defensibility of this program.

Working from Resolution No. R5-2002-0201 and the 2002 Conditional Waiver, components or additional details were developed to remove ambiguities or inconsistencies, and to provide further structure and a clear framework to assist groups and individuals in meeting the conditions of the waiver. The April staff report also proposed extending the term of the Conditional Waiver Order from two years to three years. This extension was proposed to allow for complete start up of water quality monitoring and to collect data to support continuing or rejecting the watershed approach to address these types of discharges to surface waters.

Various interested parties expressed concern over how 14 pages in December expanded to over 200 pages. The Resolution and Conditional Waiver adopted in December was 14 pages. The Conditional Waiver Order proposed in April was 15 pages. There were a number of attachments to the proposed April Conditional Waiver Order and supporting documents. These included:

- Proposed fee structure (2 pages). This was prepared in response to the Regional Board's direction that staff develop additional information on resources the Regional Board needs to support the program. Most of the Regional Board's regulatory programs are supported by discharger fees, thus staff developed further information based upon existing fee regulations.
- Water quality objectives from the Regional Board's *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition* and the *Water Quality Control Plan for the Tulare Lake Basin, Second Edition* (hereafter Basin Plans) (5 pages). These do not establish new objectives or requirements, the attachment was included to provide convenient reference to existing regulations. The Waiver adopted in December provided no detail with respect to water quality objectives.
- Proposed forms – Notice of Intent (4 pages) and Notice of Termination (2 pages). These were prepared to facilitate the application and coverage process and provide consistency in data submitted to the Regional Board.
- Monitoring and Reporting Programs (MRPs) for individuals (24 pages) and Watershed Groups (27 pages). The Regional Board at its December 2002 Irrigated Lands Waiver hearing directed staff to develop further detail on monitoring and reporting requirements to ensure data of appropriate quality would be developed and reported in a manner that would allow for comparability of data sets. Additionally, some interested parties expressed a desire to start water quality monitoring sooner than that required by the 2002 Conditional Waiver, and were contacting staff with many questions on specific details of monitoring requirements. The Waiver adopted in December provided no detail with respect to monitoring. The MRPs were developed to ensure that the Watershed Groups and individual Dischargers could provide the detailed information requested by the Regional Board and needed by parties that would be conducting monitoring activities.
- Resolution re-approving an initial study and adopting a negative declaration (4 pages).
- Staff report (138 pages). This was prepared to address questions and issues raised by the Regional Board and interested parties and contains additional reference materials as attachments covering areas on which the Regional Board requested further information (e.g., status of the EIR for the ten-year implementation program, UCD monitoring efforts, management practices, resources information, etc.).
- Letter to interested parties and Public Meeting Notice (5 pages).
- Meeting agenda and procedures (9 pages).

Ensuring compliance with the CWC and waiver conditions was a driver for developing additional detail and structure. A clear articulation of waiver conditions is necessary to inform dischargers at the initiation of the program what is required to meet the conditions of the waiver (which will help ensure compliance), and is necessary to allow the Regional Board to comply with the provisions of CWC § 13269 – i.e., to ensure that dischargers are complying with waiver conditions.

Some interested parties have expressed the perspective that the MRPs establish a new set of requirements. The waiver adopted in December contained no detail with respect to monitoring and reporting requirements, and such details must be developed before monitoring is conducted. Based upon public comments, numerous meetings with various interested parties, and Regional Board direction, staff developed the MRPs to provide direction as to what would be required of groups and individuals in their monitoring efforts. It is recognized that securing sufficient resources to support this work will be a challenge and clear articulation of requirements is necessary to ensure those resources are well spent, valid data is produced and data will be submitted to the Regional Board in an appropriate manner. Further, the Regional Board expressed a concern that there must be clear requirements for the production and reporting of the data to allow it (and others) to compare data collected in the various watersheds.

The MRP framework was used because it is consistent with the framework and process used in the Regional Board's other regulatory programs. It is a framework that provides flexibility to the Regional Board, Watershed Groups and individual Dischargers. As groups gather and analyze information, they will want to refine monitoring approaches and plans. This framework will provide flexibility in making those refinements in a timely manner. These refinements or revisions would be considered and approved at the Executive Officer level (rather than plan revisions having to be noticed and brought before the Regional Board). The framework also provides process with clear review periods for the public and the Regional Board. Submissions and revisions of MRP Plans, and future Executive Officer approvals can and should be noticed to the public for comment. The public will be able to review and comment on these plans, and if issues cannot be resolved at the staff and/or the Executive Officer level, they can be elevated to the Regional Board.

#### **Public Comment Period for the April Agenda Package**

The agenda package for the Irrigated Lands Waiver hearing at the 24/25 April 2003 meeting was released to the public on 10 April 2003. Public comments were due 21 April 2003. The Regional Board received several letters and other comments expressing concern about the length of the comment period. A 16 April 2003 letter from the Executive Officer to interested parties acknowledged:

- The request for a time extension for public comments;
- That the item, though much more detailed, was not new, being based on the extensive comments and testimony received at the December 2002 Regional Board Irrigated Lands Waiver hearing; and

- The Regional Board initially had requested that the matter be brought back in March 2003 but agreed to postpone it then in order to allow interested parties an opportunity to mediate the issues that separated them.

The Regional Board Chairman sent an addendum to the 16 April 2003 letter to interested parties on 17 April 2003. This letter acknowledged concerns on the length of the comment period, noting that the Regional Board has attempted to provide an open, reasoned process in its proceedings, and has done so by providing several public workshops and hearings, and it would continue to do so prior to making Irrigated Lands Waiver decisions. The addendum established:

- An extension of the public comment period to 5 p.m., Friday, 23 May 2003, at which time the record would be closed and no further written comments would be accepted;
- The Irrigated Lands Waiver hearing at the April 24/25 meeting was confirmed to hear the staff report and public comments;
- The Regional Board would not take action with respect to the proposed revisions to the 2002 Conditional Waiver, but may take other actions as noticed, including giving additional direction to staff; and
- The Regional Board would postpone action on the revisions to the 2002 Conditional Waiver until its meeting scheduled for 10/11 July 2003 in Sacramento.

#### **April 2003 Hearing**

A hearing on the matter was held 24 April 2003. The staff presentation and public testimony were heard over a period of six and half-hours. During the hearing, consideration of one or a combination of the following actions were before the Regional Board:

- No Action: Resolution No. R5-2002-0228 adopting the Negative Declaration and Conditional Waiver adopted on 5 December 2002 would remain in effect, or
- Direct staff to revise Resolution No. R5-2002-0201 and the Conditional Waiver and to prepare and to circulate a new environmental document for consideration at a later Regional Board meeting, or
- Rescind the Negative Declaration and Conditional Waiver that were adopted 5 December 2002, or
- Provide direction to staff for further actions

Based on testimony given at the 24 April 2003 Regional Board meeting, the Regional Board passed a motion that directed staff to:

- Work with principal interested parties to develop phased monitoring and quality assurance programs that are scientifically defensible;

- Work with principal interested parties to devise a mechanism for identifying those who are not participating in the waiver, but should be participating;
- Not consider a fee schedule at this time, and instead work with the State Water Resources Control Board (State Board) and principal interested parties to develop funding for shorter term requirements and a strategy for long term funding; and
- Work with principal interested parties to develop a workable definition for a watershed group.

## Public Process and Input

The following is a general summary of proceedings to date related to this matter, starting with the petition submitted by environmental interests to the Regional Board requesting rescission of the 1982 conditional waiver of WDRs for agricultural discharges.

Date	Description
28 November 2000	<b>Letter</b> to Regional Board Chair and Executive Officer from 65 parties requesting revocation of agricultural return flow exemptions from CWC. <b>Petition</b> to the Regional Board by DeltaKeeper, San Francisco BayKeeper and the California Public Interest Research Group to terminate Resolution No. 82-036 for irrigation return water.
26 January 2001	<b>Regional Board Agenda Item: status report</b> on the petition to revoke the waiver on agricultural return flows.
2 July 2001	<b>Staff report</b> reviewing options for controlling discharges from irrigated lands released to public.
27 July 2001	<b>Regional Board Agenda Item: workshop</b> reviewing of options for controlling discharges from irrigated lands.
7 September 2001	<b>Public Hearing:</b> petition to terminate Resolution No. 82-036 for irrigation return water denied. The Regional Board directed: -staff to request agencies and organizations to work with drainage from irrigated lands to establish local water quality monitoring efforts to identify sources of wastes -staff to assist and track the progress made by these voluntary efforts to monitor and control discharges of wastes from irrigated lands -that if the Executive Officer determined by 1 Feb. 2002 that satisfactory progress was not being made in assessing the extent and sources of wastes resulting from agricultural activities, the Executive Officer was to issue 13267 orders on appropriate parties to gather data needed for the Regional Board to evaluate the matter - staff to prepare recommendations on how to regulate this category of discharges by the end of 2002
6 December 2001	<b>Regional Board Agenda Item: workshop</b> on development of monitoring programs addressing discharges from irrigated lands. Staff was directed to work with agricultural representatives on voluntary monitoring to be conducted by the agricultural community.
15 February 2002	<b>Memo</b> to interested parties re: monitoring discharges from irrigated lands agenda item, including meeting agenda and draft table (Proposed Water Quality Monitoring Program for Discharges from Irrigated Lands).
1 March 2002	<b>Regional Board Agenda Item: status report</b> on monitoring discharges from irrigated lands.
5 March 2002	<b>Memo</b> released statewide from Office of Legislative and Public Affairs announcing the State Board would seek statewide input on controls for agricultural runoff.
8 March 2002	<b>Regional Board Workshop</b> on monitoring of discharges from irrigated lands (Stanislaus Agricultural Center, Modesto).
18 April 2002	<b>State Board Public Workshop</b> in Yuba City.
20 May 2002	<b>State Board Public Workshop</b> in Tulare.
5 September 2002	<b>Regional Board Agenda Item: status report</b> on waivers of WDRs for discharges from irrigated lands.

fall 2002	State Board determined that discharges from irrigated lands was primarily a Central Valley issue and the Regional Board resumed a lead role on the matter.
17 October 2002	Notice of Public Hearing, Draft <b>Initial Study and Negative Declaration</b> , tentative <b>Resolution and Conditional Waiver</b> of WDRs for discharges from irrigated lands <b>released to the public/interested parties</b> .
21 November 2002	<b>Public Comment Period Deadline</b> for Draft Initial Study and Negative Declaration, tentative Resolution and Conditional Waiver.
22 November 2002	Agenda material for December hearing on Conditional Waiver of WDRs for discharges from irrigated lands, including <b>staff report</b> , released to public/interested parties.
5 December 2002	<b>Public Hearing:</b> staff presentation, public testimony, Resolution approving Initial Study and Negative Declaration for Conditional Waiver of WDRs for discharges from irrigated lands adopted (unanimous vote), Resolution and Conditional Waiver of WDRs for discharges from irrigated lands adopted (unanimous vote). The Regional Board directed staff to: -consider comments and questions raised by interested parties and Regional Board members -present a discussion of the issues -evaluate alternatives to addressing issues raised and make recommendations for revisions to the Conditional Waiver
6 December 2002	<b>Motion</b> to rescind Conditional Waiver adopted 5 December 2002 failed to pass (3 ayes, 3 noes).
1 January 2003	<b>Resolution No. R5-2002-0201</b> Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands sent to interested parties.
3 January 2003	<b>Petition</b> for review by State Board filed by agricultural interests on Conditional Waiver of WDRs for discharges from irrigated lands.
3 January 2003	<b>Petitions</b> for stay of action and for review and request for evidentiary hearing by State Board filed by environmental interests on Conditional Waiver of WDRs for discharges from irrigated lands.
9 January 2003	<b>CEQA lawsuit</b> on Conditional Waiver of WDRs for discharges from irrigated lands filed in Superior Court.
February – March 2003	<b>Mediation proceedings</b> , coordinated by State Board, between agricultural and environmental representatives.
27 February 2003	<b>Notice of postponement</b> from March 2003 meeting to April 2003 meeting of agenda item: Conditional Waiver of WDRs for discharges from irrigated lands. Mailed to interested parties petitioning the Conditional Waiver to State Board. Notice also posted website with agenda for March meeting.
10 April 2003	<b>Notice of Public Hearing, Staff Report, Conditional Waiver Order and MRP</b> released to public. (Public comments originally due 21 April 2003)
16 April 2003	<b>Letter</b> from Executive Officer to interested parties acknowledging requests for time extension for public comments.
17 April 2003	<b>Letter</b> from Regional Board Chair to interested parties extending the public comment period to 23 May 2003, reconfirming the 24/25 April hearing and providing notice that the Regional Board would postpone action on the revisions to the Conditional Waiver proposed in April until its meeting scheduled for 10/11 July 2003 in Sacramento.
24 April 2003	<b>Public Hearing:</b> staff presentation on April proposals, public testimony. Motion passed by Regional Board (4 ayes, 3 noes; one Regional Board member recused) directing staff to: -work with principal interested parties to develop phased monitoring and quality assurance programs -work with principal interested parties to devise a mechanism for identifying those who are not participating in the waiver, but should be participating -not consider a fee schedule at this time, and instead work with State Board and principal interested parties to develop funding for shorter term requirements and a strategy for long term funding -work with principal interested parties to develop a workable definition for a

	Watershed Group
25 April 2003	DeltaKeeper representative during the Public Forum alleged procedural issues with the 24 April 2003 vote. Following the closed session, the Regional Board Chair announced that a staff attorney would further investigate the matter.
23 May 2003	<b>Public Comment Period Deadline</b> on April proposals.
23 June 2003	Notice of Public Hearing and revised Resolutions released to public.
7 July 2003	<b>Public Comment Period Deadline</b> on July proposals.
10/11 July 2003	Public hearing: staff presentation on April and June proposals, public testimony.

Since the 24 April 2003 hearing, staff has participated in more than sixteen meetings with interested parties, ranging from agricultural, drinking water and environmental representatives, growers, watershed groups and agencies. Some meetings have been to inform given groups about the 2002 Conditional Waiver and current status, but a majority of the meetings have been focused on information exchange and discussion of approaches for addressing issues relative to the 2002 Conditional Waiver and the April proposals. Additional meetings have been, and will continue to be, scheduled with interested parties to further discuss approaches and options to address issues.

A total of 147 letters were submitted to the Regional Board following the 10 April 2003 release of the agenda package for the April hearing and within the 23 May 2003 comment deadline. Based upon input received in the meetings discussed above, and the review of written comments conducted thus far, proposed modifications have been made to the waiver and associated documents, and the analysis of the twelve issues presented in the April 2003 Staff Report has been updated and is discussed below.

## II. Twelve Issues

Comments and questions raised relative to the 2002 Conditional Waiver from Regional Board members and interested parties were considered and synthesized into twelve issues, which were presented in the April 2003 Staff Report. Four foundational issues emerged from this analysis, which were further discussed during the staff presentation at the April 2003 hearing:

- The Goal of the Conditional Waiver.
- Fees - how the Regional Board can assure adequate resources will be available to support staff efforts on this program.
- Whether individual dischargers need to be identified.
- Monitoring and reporting requirements – Regional Board members wanted sufficient detail provided to groups and individuals relative to monitoring, quality assurance and quality control, and reporting requirements, to assure that scientifically sound data sets would be produced, and that the data would be developed and reported in a consistent manner to provide for comparability.

A summary of the twelve issues is presented in this section, excerpted from the Executive Summary of the April 2003 staff report. Based upon input from meetings with interested parties and the review of written comments conducted thus far, the discussion has been updated for a number of issues.

**1) Should the goal of the Conditional Waiver be restated?**

Yes. Language has been added to the July 2003 proposed Resolution to articulate the goal as being to replace the 1982 waiver and to establish an effective and efficient method of achieving protection of the waters of the state for their beneficial uses. Language has been modified in the proposed Resolution to clarify that it is not expected that compliance with all water quality objectives will be achieved within the term of the proposed Resolution, but that is a goal for the ten-year implementation program. The proposed July 2003 Conditional Waivers, however, require monitoring and evaluation and implementation of management practices to meet water quality standards; and based upon monitoring results, require, upon notice of the Executive Officer, further evaluation and implementation of new management practices.

**2) How should Dischargers be identified?**

➤ **Should individual dischargers be identified?**

Yes. Watershed Groups should identify owners and operators for all parcels included within the area covered by the Watershed Group. This information is necessary for a credible program – staff must be able to identify what track dischargers have chosen (i.e., group waiver, individual waiver, or ROWDs and WDRs). Agricultural interests have proposed a concept, where only those dischargers **not** covered by the Watershed Group would be identified or an exclusionary identification system. Staff does not support this concept as it will not identify dischargers to surface water under the conditions of the Conditional Waiver. Staff has revised the Notice of Intent (NOI) to significantly reduce the amount of identification information collected by the Watershed Groups at the time that the NOI is filed with the Regional Board. However, staff also proposes that the Watershed Group, as a condition of the Conditional Waiver, maintain specific Discharger contact information for each member Discharger. The Watershed Groups should also be required to provide specific contact information to the Regional Board, upon written request, when specific water quality impairment is identified and it is related to a specific discharge or farm.

One of the concerns of the Watershed Groups appears to be the cost and time to collect this information. However, as an example, these groups could use an Internet based (web page) Watershed Group enrollment process which allows the member dischargers to log in to a web page and provide the necessary information to complete the NOI and the contact information needed by the Watershed Group. The time schedule in the proposed Resolution and Conditional Waiver provides additional time to collect the necessary identification information for each Discharger who wishes to be covered by the Watershed Group Conditional Waiver.

➤ **What do Watershed Groups need to look like and how will these Groups be accountable?**

Waiver conditions focus on the nature and quality of the information that must be produced, not on what the Watershed Groups need to look like or how they should operate. Dischargers should be afforded flexibility in determining the structure and operations that will work best for their respective areas. The CWC focuses its enforcement on persons who discharge waste, not Watershed Groups, however, “group accountability” will be in the form of consequences should a group fail to perform – failure to comply with the Conditional Waiver will result in termination of the waiver with respect to those dischargers included within the Watershed Group. In addition, the CWC authorizes the Regional Board to enforce the conditions of a waiver.

➤ **Should Watershed Groups be responsible for compliance with the conditions of the Waiver as a Discharger?**

Watershed Groups should not be categorized as “Dischargers” as contemplated by the Porter-Cologne Act. They should not be accountable for discharges that impair water quality from the individual Dischargers they represent. Individual dischargers are responsible for implementing management practices to protect and improve water quality.

**3) Should the Dischargers pay fees?**

General Fund resources are insufficient to support the level of staff effort that will be required to administer a program regulating discharges from irrigated lands. However, staff has removed findings and conditions from the proposed Resolution and Conditional Waivers related to filing of a Report of Waste Discharge (ROWD) and filing fee based on Regional Board direction at the 24 April 2003 hearing. During every meeting with interested parties held since 24 April 2003, staff has asked for alternative funding concepts to secure resources needed for the State, Watershed Groups, Dischargers and others to develop and implement the irrigated lands program and monitor surface waters affected by the quality of these discharges. No alternatives to fees have been presented to address this issue.

Staff has discussed an alternative that uses a cost recovery approach to address the Regional Board’s needs with a few agricultural interests. This alternative was received cautiously, but may have been viewed as an interesting alternative to one-time filing fees. This approach would require the Watershed Group or Discharger to agree to pay for direct cost of program oversight. This practice is commonly used to cover the cost of program implementation under cleanup and abatement and spill response projects. The Discharger pays only for the time staff has spent on the project or facility and knows that the money is to cover the program’s direct costs.

Another critical issue related to fees is the program's current staffing levels and sources of funds to implement the program. As stated above, existing General Fund resources are insufficient to support the level of staff effort that is required to implement this program. The implementation of the watershed approach will save staff time and resources if approved by the Regional Board. The costs of various implementation strategies have been developed and presented to the Regional Board over the past few years. Program staff and other staff have been working very hard since September 2002 to support the watershed approach. It has become very clear that five person years (PYS) are insufficient to adequately implement the program under either the 2002 Conditional Waiver or the proposed July 2003 Conditional Waiver.

In the short term, staff proposes that the Regional Board request the State Water Resources Control Board to reallocate approximately \$600,000 of the \$5,000,000 Cleanup and Abatement funds allocated, in part to the program, to the Regional Board's personnel services budget and authorize 6 additional positions for the Irrigated Land Waiver program. Adequate support must be made available to ensure an adequate and effective program.

If resources cannot be made available to the Regional Board under the cost recovery approach or the redirection of existing Cleanup and Abatement resources, the Regional Board should reconsider waiver conditions which require Watershed Groups and/or individual Dischargers to file a Report of Waste Discharge and a one-time fee. This one-time fee should be based a single threat and complexity category of III-C. The fee for category III-C is currently \$400. If 60 to 100 enrollees file for coverage under the Waiver, this fee would generate a total amount of between \$24,000 and \$100,000.

**4) Should the discussion of prioritization be revised?**

Yes. Language has been added in the Proposed Conditional Waiver that outline factors, which groups must consider in establishing priorities for work in their respective watersheds.

**5) Should management practice development, evaluation, tracking and enforcement of implementation of Watershed Group management practices be revised in the Conditional Waiver?**

Yes. The proposed Conditional Waiver has been revised to clarify that Watershed Groups must evaluate management practice effectiveness. No revision is necessary with respect to management practice development, as the Conditional Waiver does not require development of new practices. With regard to the position that watershed plans must describe how implementation will be monitored and enforced, Watershed Groups will need to determine the best approach for their respective areas to ensure appropriate levels of implementation will be undertaken for compliance with the Conditional Waiver, and management tracking is a required condition.

**6) Should the Conditional Waiver be revised to provide additional detail on which reports will be reviewed and approved by the Regional Board?**

Yes. Additional language is needed to clarify the review and approval process for the reports specified in the Conditional Waiver. Staff proposes the adoption of a Monitoring and Reporting Program to specifically identify reporting requirements, and that the Executive Officer approve reports. Additionally, staff proposes that the public be provided notice of report availability and Executive Officer determinations on reports (i.e., whether they comply with waiver conditions), and annual program status information items to the Regional Board.

**7) Should the Conditional Waiver for watershed programs require water quality management plans from every individual?**

Maybe. Requiring individual management plans from all dischargers as a condition of the waiver would defeat, in part, the purpose of the Watershed Group approach, and make it more akin to individual waivers or WDRs. However, during a number of meetings it became clear that many farms already use management plans for various reasons. Some plans address water quality issues directly or indirectly are related to the water quality aspects of this program. In some cases, these management plans are funded with federal resources. Some Dischargers and farm consultants indicated that they could or would revise their plans to consider discharge water quality issues, but did not want to send them to the Regional Board unless every farmer had a plan and had to submit the plan. These plans could offset the need for some of the monitoring effort on the part of the Discharger. These plans could also be used to detail management practices and document what is working over time. It appears, based upon comment from some agricultural representatives, the larger agricultural interests do not want individual farm plans due to the fact the environmental interests want the plans to be a condition of the Waiver and have expressed concern as to “why they want them” or “how they might be used against the agricultural community.”

Staff proposes that additional discussion occur with interested parties to better define the benefits of farm level management plans which address water quality issues and how they could be used to reduce the amount of water quality and management practice monitoring individual dischargers may be required to complete. At this time, staff proposes that conditions for requiring individual farm plans be defined. These conditions might require that each individual farm, which discharges under the terms and conditions of the Conditional Waiver, have a plan. That plan would not be submitted to the Regional Board unless the discharge from a farm was found to impair surface water quality. Further, if the discharge is causing impairment, the plan should be revised to address the identified water quality problem. These plans could be submitted to the Agricultural Commissioners or Watershed Groups to assist them in addressing region-wide water quality issues as well.

**8) Should the Conditional Waiver specify that the watershed monitoring programs include waste constituents of concern to drinking water providers?**

Yes. Staff is proposing that Monitoring and Reporting Program for Watershed Groups and individual Dischargers require monitoring for waste constituents of concern to drinking water providers, including, but not limited to, total dissolved solids, total organic carbon, pathogens and salts. For Watershed Groups, the Monitoring and Reporting Program implements a phased approach to add these parameters to monitoring efforts over time.

**9) Should the Conditional Waiver require that the watershed plan be updated annually?**

No. Annual reports are required by the Monitoring and Reporting Program for Watershed Groups, and annual updates to the watershed plans are not necessary given the term of the waiver.

**10) Should managed wetlands be considered “irrigated lands” for purposes of regulation under this waiver?**

Yes, for the present time. Managed wetlands share similarities with irrigated agriculture and produce discharges warranting regulatory oversight. There are sufficient differences between managed wetlands and irrigated agriculture such that regulation under a separate program could be appropriate. However, given that the Regional Board has insufficient resources to develop a separate program in a stand-alone effort at this time, regulation under this Conditional Waiver will provide regulatory oversight for discharges from these operations. If other agencies (i.e., U.S. Fish and Wildlife Services and/or the California Department of Fish and Game) are interested in developing a proposed separate program for managed wetlands, the Regional Board can direct staff to work with these agencies to develop a program.

Representatives from the California Department of Fish and Game (DFG) have expressed interest in, and have met with staff to discuss, developing a separate program specifically for managed wetlands. Resources to support DFGs efforts in this are extremely limited and it is expected to remain a key issue. The Grasslands Water District and Butte Environmental Council have expressed support for the development of a separate program. Staff continues to support working with the U.S. Fish and Wildlife Services, DFG and other interested parties in developing a program specific for managed wetlands.

**11) Should discharges from rice acreage not specifically addressed by the Rice Pesticide Program be covered under the Conditional Waiver?**

Yes. Presently, the Rice Pesticide Program does not regulate all pesticides used in rice production, or other constituents of concern that can be present in discharges from rice fields. Regional Board Irrigated Land Waiver staff and rice Pesticide

Program staff have met with the California Rice Commission on two occasions, to discuss an alternative Waiver or modified rice management program. Additional discussion is planned subject to direction staff may receive during the July 2003 Regional Board hearing. It is anticipated that the rice industry will request a commodity specific conditional waiver. If such a waiver is developed, it will be consistent with the broader conditional waiver(s) for irrigated lands and priorities for a rice-specific conditional waiver.

**12) Should the Conditional Waiver be revised to provide additional detail on the criteria that must be met by the monitoring program, including whether bioassessment can be included in monitoring plans and whether load reductions must be estimated and monitored?**

Yes. Staff is proposing a Monitoring and Reporting Program to provide further detail on monitoring requirements. The current body of knowledge for bioassessment is such that it cannot yet be used for regulatory decision making, thus this type of monitoring is not required, but is encouraged. The Monitoring and Reporting Program also includes provisions for flow monitoring so loads can be calculated.

**III. July Agenda - Modifications to April Proposals**

The following is a brief summary of modifications made to the April proposals based upon input from meetings with interested parties and the review of written comments conducted thus far.

**Format and Language Changes**

- Resolution vs. Order – the Conditional Waiver Order proposed in April was reformatted back into a resolution. This will make the waiver(s) for discharges from irrigated lands consistent with other waivers issued by the State and Regional Boards since Senate Bill 390 was codified.
- Resolution reorganization – in addition to using a resolution, provisions in the proposed April order were moved, to provide for better organization, into the following sections: Legal and Regulatory Considerations, Rationale for Conditional Waiver of WDRs for Discharges from Irrigated Lands, Scope and Description of Conditional Waiver of WDRs for Discharges from Irrigated Lands, and California Environmental Quality Act.
- Two Waivers Instead of One – attached to the proposed Resolution are now two Conditional Waivers, one for Watershed Groups and one for individual Dischargers. This was done to remove any ambiguities as to which conditions applied to Watershed Groups versus individual Dischargers.
- Access – language describing the granting of Regional Board staff access to property for purposes of determining compliance with waiver conditions was shortened, and language was added in the Conditional Waiver for Watershed Groups to the effect that Watershed Groups must notify their members of the access provision.

- Power – some interested parties interpreted General Condition No. 24 in the Conditional Waiver Order proposed in April, which required dischargers to employ safeguards to prevent loss of control of waste, as to mandate the use of backup generators on pumps by all growers. The language has been modified in the proposed Conditional Waiver for Watershed Groups and Conditional Waiver for Individuals to require that dischargers will take all reasonable steps to prevent any discharge in violation of the Waiver and that they shall maintain in good working order and operate as efficiently as possible any facility, control system, including management practices and monitoring devices installed or used to achieve compliance with the Waiver.
- Finding 10 – the language in Finding #10 of the Conditional Waiver Order created an ambiguity with regard to the requirements that would have to be met for dischargers to be deemed in compliance with waiver conditions. A finding has been included in the proposed Resolution specifying that the Regional Board does not expect that water quality objectives will be achieved in all surface waters in the Region within the term of the Resolution. The conditions of the Waivers, however, will require actions that will lead to achieving water quality objectives. To satisfy the conditions of the Waivers, Watershed Groups and individual Dischargers must submit technical reports, conduct monitoring of surface waters, implement management practices, evaluate the effectiveness of management practices, refine management practices to improve their effectiveness where necessary, protect against pollution and nuisance, and protect the waters of the state.
- Definitions and Water Quality Objectives – this information was consolidated into one attachment.
- Report Titles – some report titles have been revised to create more clarity.

### **Monitoring Requirements**

The July agenda contains two proposed Monitoring and Reporting programs for Regional Board consideration. These monitoring programs have been revised based on Regional Board directions and comments received from interested parties. These programs require the submittal of Technical Reports under Water Code Section 13267 to ensure that conditions of the Conditional Waivers are being met.

The Watershed monitoring program has been revised to allow the Watershed Group to implement a phased monitoring approach. Both monitoring programs include monitoring for basic water quality parameters and drinking water constituents of concern. Toxicity is required in the first phase of the Watershed monitoring program. However, toxicity is optional for individual dischargers unless monitoring has shown elevated levels in the discharge or surface waters. Minor revisions to the technical reports in both the Conditional Waiver and the Monitoring and Reporting programs have been made, with one exception. The Corrective Action Report or CAR has been replaced with a condition that requires the generation and submittal of a “management plan.” The Watershed Groups or the Regional Board will make this plan available to the public for comments. The objective of this plan is to document measures taken to eliminate surface water quality impairments.

The timeline for submittal of technical reports has been revised to account for the extended Regional Board meeting process and to address various comments related to the dynamic nature of the existing program.

#### **IV. Actions to be considered by the Regional Board in July**

The Regional Board may consider one or a combination of the following actions:

**A. If the Board, in the previous agenda item, HAS RESCINDED the Waiver and Negative Declaration adopted in December 2002, then the Board will consider one or a combination of the following actions:**

- 1. No Action: If no action, then Resolution No. R5-2002-0228 adopting the Negative Declaration and Resolution No. R5-2002-0201 adopting the Conditional Waiver on 5 December 2002 are no longer in effect; or*
- 2. Re-adopt the Negative Declaration and/or Conditional Waiver that were adopted 5 December 2002; or*
- 3. One of the actions under C. below.*

**B. If the Board, in the previous agenda item, HAS NOT RESCINDED the Waiver and Negative Declaration adopted in December 2002, then the Board will consider one or a combination of the following actions:**

- 1. No Action: If no action, then Resolution No. R5-2002-0228 adopting the Negative Declaration and Resolution No. R5-2002-0201 adopting the Conditional Waiver on 5 December 2002 remain in effect; or*
- 2. Rescind the Negative Declaration and/or Conditional Waiver that were adopted 5 December 2002; or*
- 3. One of the actions under C. below.*

**C. The Board may also consider one or a combination of the following actions:**

- 1. Direct staff to revise Resolution No. R5-2002-0201 adopting the Conditional Waiver on 5 December 2002 and/or to prepare and to circulate a new environmental document for consideration at a later Regional Board meeting; or*
- 2. Adopt the revised Conditional Waiver and/or Negative Declaration that were prepared for Board consideration at the April 2003 Board Meeting; or*

3. *Adopt a revised Conditional Waiver and CEQA documents that consider written and oral comments received up to and including the July 10/11 Regional Board hearing; or*
4. *Direct staff to re-circulate for additional public comment, and for consideration at a later Regional Board hearing, a Conditional Waiver and CEQA documents that were prepared based on comments received up through 10, 11 July 2003 Regional Board hearing; or*
5. *Direct staff to take other related actions.*

## **V. Recommendations**

Adopt the proposed CEQA Resolution, adopt the proposed Resolution and Conditional Waivers for Watershed Groups and Individual Dischargers, and Monitoring and Reporting Programs for Watershed Groups and Individual Dischargers, with late revisions or other revisions by the Regional Board, if any.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

RESOLUTION NO.

APPROVING AN INITIAL STUDY  
AND  
ADOPTING A NEGATIVE DECLARATION  
FOR  
CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS  
FOR DISCHARGES FROM IRRIGATED LANDS

WHEREAS,

1. The California Regional Water Quality Control Board, Central Valley Region (Regional Board) proposes to adopt a Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Resolution No.     ), which revises the Conditional Waiver adopted in Resolution No. R5-2002-0201 on 5 December 2002; and
2. The Regional Board is the lead agency for this project pursuant to the California Environmental Quality Act and has conducted an Initial Study in accordance with Title 14 California Code of Regulations (CCR) section 15063; and
3. Conditions included in the proposed Conditional Waiver and identified in the Negative Declaration will avoid the project's potential significant effects or will reduce such effects to a less than significant impact; and
4. Copies of the Initial Study and proposed Negative Declaration were transmitted to or made available to all agencies and persons known to be interested in these matters and the public notice provided exceeded the legal requirements for such notice and the comments received have been addressed; and
5. The Regional Board considered all testimony and evidence at a public hearing held on 5 December 2002 in Sacramento, California, and good cause was found to approve the Initial Study and adopt a Negative Declaration, and
6. The Initial Study and Negative Declaration has been modified, consistent with Title 14 CCR section 15073.5(c), to include information, such as reports and studies on impacts of agricultural discharges to waters of the state, contained in the Regional Board's records to clarify the initial study (See Attachment A to this Resolution); and
7. This Resolution re-approves the Initial Study and readopts the Negative Declaration to include this information, and consistent with Title 14 CCR section 15073.5(c) recirculation of the Initial Study and Negative Declaration is not required.

RESOLUTION NO.  
APPROVING AN INITIAL STUDY  
AND ADOPTING A NEGATIVE DECLARATION  
FOR CONDITIONAL WAIVER OF  
WASTE DISCHARGE REQUIREMENTS  
FOR DISCHARGES FROM IRRIGATED LANDS

THEREFORE BE IT RESOLVED, that the California Regional Water Quality Control Board, Central Valley Region:

1. Withdraws Resolution No. R5-2002-0228, which approved the Initial Study and adopted the Negative Declaration on 5 December 2002.
2. Approves the revised Initial Study, including Attachment A of this Resolution, and
3. Adopts the revised Negative Declaration for the *Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands*, and
4. Finds that the adoption of the Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands will not have a significant impact on the environment because the conditions of the waiver, including requirements to monitor surface water, determine waste loads, and review and implement effective management practices, will result in improvements in the quality of the waters of the state.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Central Valley Region, on July 2003.

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THOMAS R. PINKOS, Executive Officer

RESOLUTION NO.  
APPROVING AN INITIAL STUDY  
AND ADOPTING A NEGATIVE DECLARATION  
FOR CONDITIONAL WAIVER OF  
WASTE DISCHARGE REQUIREMENTS  
FOR DISCHARGES FROM IRRIGATED LANDS

**ATTACHMENT A**

List of reports and studies on impacts of agricultural discharges to waters of the state include:

- I. Central Valley Regional Water Quality Control Board, Bay Protection Program Toxic Hot Spot Cleanup Plans for Diazinon in Orchard Dormant Spray, Diazinon and Chlorpyrifos in Urban Stormwater, Chlorpyrifos in Irrigation Return Flows (Draft., October 2002).
2. Sacramento River Watershed Program, Organophosphate Pesticide Focus Group, Technical Memorandum: Study of Diazinon Runoff in the Main Canal Basin During the Winter 2000-2001 Dormant Spray Season (Draft, July 16, 2002).
3. Central Valley Regional Water Quality Control Board: Algae Toxicity Study, Monitoring Results: 2000-2001 (August 2002).
4. Grober, Leslie and Eric Oppenheimer, Central Valley Regional Water Quality Control Board, San Joaquin Salt and Boron TMDL Progress Update (August 28, 2001).
5. Staff Report for the Central Valley Regional Water Quality Control Board, Total Maximum Daily Load for Salinity and Boron in the Lower San Joaquin River: Appendices A through G (January 2002).
6. Grober, Leslie and Shakoora Azimi, San Joaquin River Organophosphorous Pesticides TMDL Workshop, Current Activities of the California Regional Water Quality Control Board, Central Valley (January 17 & 18, 2001).
7. Azimi, Shakoora and Mary Menconi, San Joaquin River Organophosphorous Pesticides TMDL Workshop: Draft Numeric Target, California Regional Water Quality Control Board, Central Valley (June 21, 2001).
8. Central Valley Regional Water Quality Control Board, San Joaquin River OP Pesticide TMDL, Problem Statement (November 2, 2000).
9. Central Valley Regional Water Quality Control Board, Draft Program of the Implementation Report for the Control of Diazinon in the Sacramento and Feather Rivers (May 2002).
10. Central Valley Regional Water Quality Control Board, Sacramento and Feather River Diazinon Total Maximum Daily Load Report (May 2002).

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**ATTACHMENT A (cont.)**

11. Azimi-Gaylon, Shakoora et al., Central Valley Regional Water Quality Control Board, Diazinon and Chlorpyrifos Target Analysis ( Draft, June 21, 2001).
12. Kuivila, Kathryn M., Holly D. Barnett and Jody L. Edmonds, Herbicide Contributions in the Sacramento-San Joaquin Delta, California, U.S. Geological Survey (1999).
13. Kuivila, Kathryn M., Studies Relating Pesticide Concentrations to Potential Effects on Aquatic Organisms in the San Francisco Bay-Estuary, California, U.S. Geological Survey (1999).
14. Interagency Ecological Program for the San Francisco Estuary, IEP Newsletter, Vol. 13, No. 4 (Fall 2000).
15. Dileanis, Peter D., Kevin P. Bennett, and Joseph L. Domagalski, Occurrence and Transport of Diazinon in the Sacramento River, California, and Selected Tributaries During Three Winter Storms, January February 2000 (USGS 2002).
16. Panshin, Sandra Y., Neil M. Dubrovsky, JoAnn M. Gronberg, and Joseph L. Domagalski, Occurrence and Distribution of Dissolved Pesticides in the San Joaquin River Basin, California (USGS; Water Resources Investigations Report 98-4032) (1998).

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

RESOLUTION NO. R5-2003-

CONDITIONAL WAIVERS OF WASTE DISCHARGE REQUIREMENTS  
FOR  
DISCHARGES FROM IRRIGATED LANDS  
WITHIN THE CENTRAL VALLEY REGION

WHEREAS, the California Regional Water Quality Control Board, Central Valley Region (hereafter Regional Board) finds that:

1. The Central Valley Region has more than seven million acres of cropland under irrigation and thousands of individuals and operations generating wastewater that fall into the category of “discharges from irrigated lands.”
2. The Central Valley Region has thousands of miles of surface waters that are affected by discharges of waste from irrigated lands. These discharges may adversely affect the quality of the waters of the state.
3. Whether an individual discharge of waste from irrigated lands may affect the quality of the waters of the state depends on the quantity of the discharge, quantity of the waste, the quality of the waste, the extent of treatment, soil characteristics, distance to surface water, depth to groundwater, crop type, management practices and other site-specific factors. These individual discharges may also have a cumulative affect on waters of the state. Some water bodies within the Central Valley have been listed as impaired pursuant to Clean Water Act section 303(d). Waste discharges from some irrigated lands have impaired and will likely continue to impair the quality of the waters of the state within the Central Valley Region if not subject to regulation pursuant to the Porter-Cologne Water Quality Control Act (codified in California Water Code Division 7) (hereafter CWC).
4. As authorized by CWC section 13269, this Resolution adopts conditional waivers of waste discharge requirements for discharges of waste from irrigated lands that requires persons who obtain coverage under the waivers to prepare and implement technical reports to monitor surface water; evaluate, monitor and implement management practices that result in attainment of receiving water limitations based on water quality objectives; and, if directed by the Regional Board, implement additional measures to protect the quality of waters of the state within the Central Valley Region.

**LEGAL AND REGULATORY CONSIDERATIONS**

5. CWC section 13260 requires that any person who is discharging waste, or proposing to discharge waste (other than to a community sewer system), which

could affect the quality of the waters of the state within the Central Valley Region, shall file a Report of Waste Discharge (ROWD) with the Regional Board.

6. CWC section 13263 requires the Regional Board to prescribe Waste Discharge Requirements (WDRs), or waive WDRs, for the discharge. The WDRs must implement relevant water quality control plans and the CWC.
7. CWC section 13269 authorizes the Regional Board to waive WDRs for a specific discharge or specific type of discharge if: (1) the waiver is not against the public interest; (2) the waiver does not exceed 5 years in duration; (3) the waiver is conditional and may be terminated at any time, and (4) a public hearing has been held. CWC section 13269(e) states that the Regional Board shall require compliance with the conditions of waivers.
8. CWC section 13267(b) provides that: *“In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports.”*
9. The technical reports required by this Waiver and the attached Monitoring and Reporting Programs are necessary to evaluate each Watershed Group and individual Discharger's compliance with the terms and conditions of the Waivers.
10. The Regional Board's *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition* and the *Water Quality Control Plan for the Tulare Lake Basin, Second Edition* (hereafter Basin Plans) designate beneficial uses, establish water quality objectives, contain programs of implementation needed for achieving water quality objectives, and reference the plans and policies adopted by the State Water Resources Control Board (State Board).
11. The existing and potential beneficial uses of waters of the state within the Central Valley Region include one or more of the following: municipal and domestic supply; agricultural supply; industrial process and service supply; power generation; water contact recreation; non-contact water recreation; warm and cold freshwater

habitat; migration of aquatic animals; spawning, reproduction and/or early development; wildlife habitat; estuarine habitat; preservation of biological habitats of special significance; shellfish harvesting; navigation; rare, threatened, and endangered species; freshwater replenishment; and groundwater recharge.

12. The State Board has adopted the “Plan for California’s Nonpoint Pollution Control Program” dated January 2000. The purpose of the NPS [Non Point Source] Program Plan is to improve the State’s ability to effectively manage NPS pollution and conform to the requirements of the federal Clean Water Act and the federal Coastal Zone Act Reauthorization Amendments of 1990. The plan describes a three-tier approach for addressing nonpoint source pollution. The first tier of the approach is considered non-regulatory implementation of management practices. Conditional waivers of waste discharge requirements are characterized as a second-tier process. WDRs are categorized as a third-tier process.
13. State Board Resolution No. 68-16 (“Statement of Policy with Respect to Maintaining High Quality of Waters in California”) (Resolution 68-16) requires a regional board, in regulating the discharge of waste, to maintain high quality waters of the state until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the state, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in a regional board’s policies (e.g., quality that exceeds water quality objectives). This Resolution and attached Waivers are consistent with Resolution 68-16 because they require persons who obtain coverage under the Waivers to implement management practices intended to achieve water quality objectives and to prevent pollution and nuisance.
14. **Attachment A** to this Resolution identifies regulatory requirements contained in the Basin Plans that apply to the discharge of waste from irrigated lands, and also provides definitions of terms for purposes of this Resolution and the Waivers.

#### **RATIONALE FOR CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES FROM IRRIGATED LANDS**

15. In 1982, the Regional Board adopted Resolution No. 82-036 that conditionally waived Waste Discharge Requirements for 23 categories of discharges, including irrigation return water and storm water runoff (1982 Waiver). Pursuant to CWC section 13269, these waivers terminated on 1 January 2003. On 5 December 2002, prior to the termination of the 1982 Waiver, the Regional Board adopted Resolution No. R5-2002-0201 establishing a new Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands Within the Central Valley Region (2002 Conditional Waiver).

16. Discharges from irrigated lands can and/or do contain wastes as defined in CWC § 13050, that could affect the quality of the waters of the state. The discharge of tailwater, wastewater and/or stormwater from irrigated lands occurs to both surface and groundwater. Such wastes include: earthen materials, including soil, silt, sand, clay, rock; inorganic materials, (such as metals, salts, boron, selenium, potassium, nitrogen, etc.); organic materials, (such as organic pesticides) that enter or threaten to enter into waters of the state. Examples of waste not qualifying for conditional discharge under this Waiver include, hazardous waste and human waste.
17. In order to effectively regulate discharges from irrigated lands within the Central Valley Region, it is appropriate to distinguish between the different types of agriculture, geographic locations, crops, source water, and management practices to prevent water quality impairments from discharges of waste from irrigated lands.
18. Various regional and sub-basin Watershed Groups have formed on behalf of individual Dischargers to address issues regarding the discharge of wastewater and stormwater from irrigated lands to waters of the state. These Watershed Groups have the potential for identifying and correcting water quality impairments without the need for the third-tier process, which would be the issuance of WDRs.
19. The Regional Board has reviewed the 2002 Conditional Waiver, adopted on 5 December 2002, and has determined that additional conditions are required to protect water quality.
20. With this Resolution the Regional Board adopts two Conditional Waivers of Waste Discharge Requirements for Discharges from Irrigated Lands that modifies the 2002 Conditional Waiver to clarify and to include additional conditions. One Conditional Waiver is for Watershed Groups or other entities, which form on behalf of individual Dischargers to comply with the CWC and the Regional Board Plans and Policies. The second Conditional Waiver is for individual Dischargers. Unless otherwise noted, these two Conditional Waivers are hereafter referred to in this Resolution as “Waivers.” These additional conditions are contained within the Watershed Group Conditional Waiver (**Attachment B**) and the individual Discharger Conditional Waiver (**Attachment C**).
21. The purpose of the Waivers is to provide an interim program until a 10-year implementation program can be developed for Dischargers covered by this Resolution.
22. These Waivers set forth conditions that will require individual Dischargers and/or Watershed Groups to conduct activities required by a monitoring and reporting program to determine affects on water quality and to implement and evaluate

management practices that will result in achieving compliance with water quality objectives in the waters of the state, and to conduct activities in a manner to prevent nuisance.

23. This Resolution conditionally waives the requirement to file ROWDs and obtain WDRs for discharges from irrigated lands, which includes surface discharges (also known as tailwater), operational spills, subsurface drainage generated by irrigating crop land or by installing drainage systems to lower the water table below irrigated lands (wastewater) and storm water runoff flowing from irrigated lands.
24. At this time, it is appropriate to adopt a waiver of ROWDs and WDRs for this category of discharge because: the discharges have the same or similar waste in the same or similar operations, use the same or similar treatment methods and management practices (i.e., source control, reduced use, holding times, cover crops), and the Regional Board has limited facility specific information, and limited water quality data on facility specific discharges. In addition, it is appropriate to regulate this category of agricultural facilities under Waivers rather than individual WDRs or general WDRs in order to simplify and streamline the regulatory process while additional facility and water quality information is collected over the term of the Resolution and Waivers, and an Environmental Impact Report (EIR) for a ten year implementation program pursuant to the California Environmental Quality Act (CEQA) is prepared to assess alternatives to ensure the protection of water quality.
25. It is not appropriate at this time to adopt individual or general WDRs to regulate discharges of waste from irrigated lands because there are estimated to be more than 25,000 individual dischargers who discharge waste from irrigated lands and it is neither feasible nor practicable due to limitations of Regional Board resources to adopt WDRs within a reasonable time. The Regional Board supports the approach of allowing dischargers to be represented by watershed groups in that it can provide a more efficient means to comply with many of the conditions contained in the Waivers. Although there is information that discharges of waste from irrigated lands have impaired waters of the state, information concerning the specific locations of impairments, specific causes, specific types of waste and specific management practices that mitigate impairments, improve and protect water quality is not generally available. The conditions of the Waivers will result in the development of new and additional information that should provide a more reasonable basis for the adoption of individual or general WDRs, where necessary, in the future. The conditions of the Waivers require actions to protect and improve the quality of the waters of the state within the Central Valley Region. The conditions of the Waivers may be enforced in a manner similar to enforcement of WDRs. Coverage under the Waivers may be terminated at any time and the Executive Officer may require any person to submit a ROWD and seek individual WDRs.

26. The adoption of this Resolution and Waivers is not against the public interest because (1) it was adopted in compliance with CWC sections 13260, 13263 and 13269 and other applicable law, (2) it includes conditions that are intended to reduce and prevent pollution and nuisance and protect the beneficial uses of the waters of the state, (3) it contains more specific and more stringent conditions for protection of water quality compared to either the 1982 Waiver or the 2002 Conditional Waiver adopted by the Regional Board on 5 December 2002, (4) given the magnitude of and number of persons who discharge waste from irrigated lands it provides for an efficient and effective use of limited Regional Board resources, and (5) it provides reasonable flexibility for the Dischargers who seek coverage under the Waivers by providing them with the option of complying with the CWC through participation in Watershed Groups or as individuals.
27. As part of the Regional Board's program strategy, the Regional Board has directed staff to prepare an EIR, develop a comprehensive program to address discharges from irrigated lands, and establish a monitoring and reporting program that will assess the sources and affects of discharges of waste from irrigated lands. This program will enable the Regional Board to track progress in reducing the amount of waste discharged to waters of the state and measure the effectiveness of management practices implemented in order to meet the goal of compliance with water quality objectives within 10 years.
28. Resolution R5-2002-0201 implemented a conditional waiver, which is categorized as a second-tier regulatory process under California's NPS Program Plan, dated January 2000, to meet the requirements of the CWC. The third-tier process, WDRs, including individual WDRs Orders or General WDRs Orders, may be adopted in the future for one or more types of irrigated lands discharges covered by this Waiver if, for example, it is determined that these Waivers are not effective in ensuring that water quality is protected.
29. As time and resources allow, discharges from irrigated lands will be further evaluated by the Regional Board to determine if the Waivers are adequate to improve and/or protect water quality and its beneficial uses. This evaluation will: characterize these discharges; evaluate the effect of these discharges on waters of the state; and assess the effectiveness of management practices implemented in addressing impairments of waters of the state.

**SCOPE AND DESCRIPTION OF CONDITIONAL WAIVER OF  
WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES  
FROM IRRIGATED LANDS**

30. This Resolution and its associated Conditional Waivers replace Resolution No. R5-2002-0201 and the December 2002 Conditional Waiver.

31. These Waivers apply to discharges from irrigated lands to surface waters, which are waters of the state.
32. Irrigated lands are lands where water is applied for producing crops and, for the purpose of these Waivers, includes, but is not limited to, land planted to row, field and tree crops as well as commercial nurseries, nursery stock production, managed wetlands and rice production.
33. These Waivers do not apply to discharges that are subject to the National Pollutant Discharge Elimination System (NPDES) permit program under the Clean Water Act. Discharges from irrigated lands that constitute agricultural return flows are exempt from regulation under the NPDES permit program. These Waivers do not apply to discharges of waste that are regulated under another Conditional Waiver, individual WDRs or general WDRs. This Resolution and Waivers do not supersede the Regional Board's Basin Plan and policies, including prohibitions and implementation plans, and the State Board's plans and policies.
34. Pursuant to CWC section 13263(g), discharges of waste to waters of the state is a privilege, not a right, and adoption of this Resolution and Waivers, and the receipt of a Notice of Applicability (NOA) from the Executive Officer, does not create a vested right to continue the discharge.
35. This action to waive the submittal of ROWDs and the issuance of WDRs for discharges from irrigated lands: (a) is conditional, (b) may be terminated at any time, (c) does not permit an illegal activity, (d) does not preclude the need for permits that may be required by other state or local government agencies, and (e) does not preclude the Regional Board from administering enforcement remedies (including civil liability) pursuant to the CWC.
36. For the purposes of this Resolution, individual Dischargers who elect to seek individual coverage under this Resolution and its Waiver will be referred to as Discharger. Those individual Dischargers who are participating in a watershed group or other similar entity that seeks coverage under the Watershed Conditional Waiver will be referred to collectively as Watershed Group.
37. The formation, operation and funding of Watershed Groups is the responsibility of the local entities and/or individual Dischargers who are represented by the Watershed Group.
38. These Waivers provide an alternative regulatory option to WDRs. Individual Dischargers or Watershed Groups, on behalf of individual Dischargers, may seek coverage under these Waivers. The Waivers include receiving water limitations based upon existing water quality objectives contained in the Regional Board's Basin Plans, the NTR and the CTR.

39. The Regional Board does not expect that water quality objectives will be achieved in all waters of the state in the Central Valley Region within the term of this Resolution. The conditions of the Waivers, however, will require actions that will lead to achieving water quality objectives. To satisfy the conditions of the Waivers, Watershed Groups and individual Dischargers must submit technical reports, conduct monitoring of surface waters, implement management practices, evaluate the effectiveness of management practices, refine management practices to improve their effectiveness where necessary, protect against pollution and nuisance, and protect the waters of the state. These technical reports must be submitted to the Regional Board in accordance with CWC section 13267. The technical reports must document the results of water quality and management practice monitoring, describe actions taken to correct water quality impairments and nuisance conditions, and identify future actions necessary to improve and protect water quality. The management practices must be designed and implemented to achieve improvements in water quality and compliance with the conditions in the Waivers and the State and Regional Board Plans and Policies.
40. The Regional Board is in the process of developing a 10-year implementation program, with respect to discharges from irrigated lands, for achieving water quality objectives in the waters of the state within the Central Valley Region. This implementation program includes, but is not limited to, the implementation and enforcement of this Resolution, Waiver and associated Monitoring and Reporting Programs, water quality monitoring of discharges from irrigated land and affected surface water, and preparation of an EIR to evaluate currently available and new information and evaluate alternatives for achieving water quality objectives, protecting the beneficial uses of waters of the state, and preventing nuisance. Public scoping meetings have been held in Fresno and Sacramento to refine the scope of the EIR. Cleanup and Abatement Account resources have been made available to complete the EIR. The Request for proposal is being developed to select a contractor to complete the EIR.
41. A Watershed Group or an individual Discharger may apply for coverage under the Waivers as specified in the appropriate Waiver. The Watershed Group or individual Discharger must submit a complete Notice of Intent (NOI), **Attachment D**, to comply with the conditions of the Waivers. Upon submittal of a complete and approved NOI, the individual Discharger or Watershed Group will be considered covered under the Waiver and the Executive Officer will issue a Notice of Applicability (NOA).
42. Attached to the Resolution is the Watershed Group Waiver entitled **Attachment B - Watershed Group Conditional Waiver of Waste Discharge Requirements**. This Waiver describes the terms and conditions that apply to Watershed Groups or similar entities that represent individual Dischargers as a common group.

43. Attached to the Resolution is the Conditional Waiver for individual Dischargers entitled **Attachment C** - Conditional Waiver for Individual Discharger Conditional Waiver of Waste Discharge Requirements. This Waiver describes the terms and conditions that apply to individual Dischargers.
44. Compliance with Waiver conditions may be obtained by individual Dischargers on behalf of themselves and/or by Watershed Groups on behalf of their member Dischargers.
45. Individual Dischargers are not required by the Regional Board to join a Watershed Group to be covered by this Resolution and Waivers. Individual Dischargers who choose not to participate in a Watershed Group may file for coverage under the Individual Conditional Waiver or file a ROWD for individual Waste Discharge Requirements.
46. This Resolution and its Waivers may be terminated at any time by the Regional Board and may be revised by the Regional Board after a public hearing. The Executive Officer may terminate the applicability of these Waivers with respect to a specific Discharger or Watershed Group upon notice to the Discharger or Watershed Group.
47. Interested persons were notified that the Regional Board will consider the adoption of a Resolution, which conditionally waives WDRs for discharges from irrigated lands, including irrigation wastewater and/or stormwater, to surface waters as described in this Resolution and Waivers and were provided an opportunity for a public hearing and an opportunity to submit written comments.
48. In a public hearing, all comments pertaining to the Resolution and Waivers were heard and considered.

### **CALIFORNIA ENVIRONMENTAL QUALITY ACT**

49. For purposes of adoption of this Resolution, the Regional Board is the lead agency pursuant to the California Environmental Quality Act (CEQA)(Public Resources Code sections 21100 et seq.). On 5 December 2002, the Regional Board approved an Initial Study and Negative Declaration in Resolution No. R5-2002-0201. The Resolution modifies the Conditional Waiver contained in Resolution No. R5-2002-0201 but does not substantially change the project considered in the Initial Study and Negative Declaration. There are additional documents that clarify the basis for this waiver. These documents are attached to Resolution No R5-2003- which approves the Initial Study and adopted a Negative Declaration with the clarifications. Consistent with Title 14 California

Code of Regulations section 15073.5(c) it is not necessary to recirculate the Initial Study and Negative Declaration.

**THEREFORE BE IT RESOLVED:**

1. Resolution No. R5-2002-0201, dated 5 December 2002, adopting the Conditional Waiver is hereby rescinded.
2. The goal of this Resolution and its Waivers is to improve and protect water quality by providing a program to manage discharges from irrigated lands that cause or contribute to conditions of pollution or nuisance as defined in Section 13050 of the California Water Code or that cause or contribute to exceedances of any Regional or State Board numeric or narrative water quality standard by reducing discharges of waste.
3. Pursuant to California Water Code sections 13263, 13267 and 13269, Dischargers (Watershed Groups or individual Dischargers) of irrigation wastewater, wastewater and/or stormwater from irrigated lands to waters of the state, who file for coverage under the Waivers in order to meet the provisions contained in California Water Code Division 7 and regulations and plans and policies adopted thereunder, and who request waiver of waste discharge requirements shall comply with the terms and conditions contained in Watershed Group Conditional Waiver of Waste Discharge Requirements, **Attachment B** or Individual Discharger Conditional Waiver of Waste Discharge Requirements, **Attachment C**.
4. The discharge of any waste not specifically regulated by the Waiver described herein is prohibited unless the discharger complies with CWC Section 13260(a) and the Regional Board either issues waste discharge requirements pursuant to CWC Section 13263 or an individual waiver pursuant to CWC Section 13269 or the time frames specified in CWC Section 13264(a) have elapsed.
5. The Regional Board waives the submittal of a ROWD and WDRs for discharges from irrigated land if the discharger complies with the Conditional Waivers of Waste Discharge Requirements for Discharges from Irrigated Lands, attached to this Resolution and associated Monitoring and Reporting Programs.
6. Dischargers, Watershed Groups and the individual Dischargers participating in the Watershed Groups shall take action to comply with the terms and conditions of the Waivers adopted by this Resolution and improve and protect waters of the state.
7. This Waiver shall not create a vested right and all such discharges shall be considered a privilege, as provided for in CWC Section 13263.

RESOLUTION NO. R5-2003-  
CONDITIONAL WAIVER OF  
WASTE DISCHARGE REQUIREMENTS  
FOR DISCHARGES FROM IRRIGATED  
LANDS WITHIN THE CENTRAL VALLEY REGION

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8. Pursuant to CWC Section 13269, this action waiving the issuance of waste discharge requirements for certain specific types of discharges: (a) is conditional, (b) may be terminated at any time, (c) does not permit an illegal activity, (d) does not preclude the need for permits which may be required by other local or governmental agencies, and (e) does not preclude the Regional Board from administering enforcement remedies (including civil liability) pursuant to the CWC.
9. A waiver of WDRs for a type of discharge may be superseded by the adoption by the State Board or Regional Board of specific waste discharge requirements or general waste discharge requirements for this type of discharge.
10. The Regional Board may review this Resolution and these Waivers at any time and may modify or terminate the Waivers in their entirety or for individual Dischargers or Watershed Groups, as is appropriate.
11. The Regional Board directs the Executive Officer to provide regular updates to the Regional Board regarding the effectiveness of the conditional Waivers to regulate these types of discharges. These updates may include: Executive Officer Reports, memorandums, staff reports, workshops, and agenda items.
12. This Resolution and Waivers shall become effective **July 2003** and expire **31 December 2005** unless rescinded, renewed or extended by the Regional Board.

I, THOMAS R. PINKOS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on \_\_\_\_\_.

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THOMAS R. PINKOS, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

RESOLUTION NO. R5-2003-

APPLICABLE WATER QUALITY CONTROL PLANS  
AND DEFINITIONS  
FOR  
DISCHARGES FROM IRRIGATED LANDS TO SURFACE WATERS

CONDITIONAL WAIVER OF  
WASTE DISCHARGE REQUIREMENTS  
FOR  
DISCHARGES FROM IRRIGATED LANDS

The following information is provided to ensure that individual Dischargers and Watershed Groups are aware of the existing Water Quality Objectives contained in the Regional Board's Water Quality Control Plans (Basin Plans). This information is not a complete list. More specific Water Quality Objectives and implementations plans regarding discharges from agricultural lands are contained within these Basin Plans. This information will be used to assess and measure the impact of discharges of waste in irrigation water and stormwater from irrigated lands to surface waters under the terms and conditions of the Conditional Waivers and to develop a 10-year implementation program.

**WATER QUALITY CONTROL PLANS**

From the Water Quality Control Plans (Basin Plans) for the California Regional Water Quality Control Board, Central Valley Region:

The Sacramento River Basin and San Joaquin River Basin, Fourth Edition – 1998

The Tulare Lake Basin, Second Edition – 1995

**Identical Water Quality Objectives for inland surface waters from both Basin Plans**

*The following are some of the applicable water quality objectives that relate to irrigated lands activities. For a complete list of the water quality objectives, refer to the Basin Plans. Also, please note that the Basin Plans are revised periodically.*

**Color** - Water shall be free of discoloration that causes nuisances or adversely affects beneficial uses.

**Sediment** - The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

**Settleable Material** - Waters shall not contain substances in concentrations that result in the deposition of material that cause nuisance or adversely affects beneficial uses.

**Suspended Material** - Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.

**Tastes and Odors** – Waters shall not contain taste- or odor-producing substances in concentrations, that impart undesirable tastes or odors to domestic or municipal water supplies or to fish flesh or other edible products of aquatic origin, or that cause nuisance, or otherwise adversely affect beneficial uses.

**Toxicity** - All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or the interactive effect of multiple substances. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the Regional Water Board. The Regional Water Board will also consider all material and relevant information submitted by the Discharger and other interested parties and numerical criteria and guidelines for toxic substances developed by the State Water Board, the California Office of Environmental Health Hazard Assessment, the California Department of Health Services, the U.S. Food and Drug Administration, the National Academy of Sciences, the U.S. Environmental Protection Agency, and other appropriate organizations to evaluate compliance with this objective.

The survival of aquatic life in surface waters subjected to a waste discharge or other controllable water quality factors shall not be less than that for the same water body in areas unaffected by the waste discharge, or, when necessary, for other control water that is consistent with the requirements for "experimental water" as described in *Standard Methods for the Examination of Water and Wastewater*, latest edition. As a minimum, compliance with this objective as stated in the previous sentence shall be evaluated with a 96-hour bioassay.

In addition, effluent limits based upon acute biotoxicity tests of effluents will be prescribed where appropriate; additional numerical receiving water quality objectives for specific toxicants will be established as sufficient data become available; and source control of toxic substances will be encouraged.

**Turbidity** - Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases in turbidity attributable to controllable water quality factors shall not exceed the following limits:

- Where natural turbidity is between 0 and 5 Nephelometric Turbidity Units (NTUs), increases shall not exceed 1 NTU.
- Where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent.
- Where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs.

- Where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected.

### **Water Quality Objectives from the Sacramento River and San Joaquin River Basin Plan**

**Floating Material** - Water shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses.

#### **Pesticides**

- No individual pesticide or combination of pesticides shall be present in concentrations that adversely affect beneficial uses.
- Discharges shall not result in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses.
- Total identifiable persistent chlorinated hydrocarbon pesticides shall not be present in the water column at concentrations detectable within the accuracy of analytical methods approved by the Environmental Protection Agency or the Executive Officer.
- Pesticide concentrations shall not exceed those allowable by applicable antidegradation policies (see State Water Resources Control Board Resolution No. 68-16 and 40 C.F.R. Section 131.12.).
- Pesticide concentrations shall not exceed the lowest levels technically and economically achievable.
- Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of pesticides in excess of the Maximum Contaminant Levels set forth in California Code of Regulations, Title 22, Division 4, Chapter 15.

Where more than one objective may be applicable, the most stringent objective applies.

For the purposes of this objective, the term pesticide shall include: (1) any substance, or mixture of substances which is intended to be used for defoliating plants, regulating plant growth, or for preventing, destroying, repelling, or mitigating any pest, which may infest or be detrimental to vegetation, man, animals, or households, or be present in any agricultural or nonagricultural environment whatsoever, or (2) any spray adjuvant, or (3) any breakdown products of these materials that threaten beneficial uses. Note that discharges of "inert" ingredients included in pesticide formulations must comply with all applicable water quality objectives.

**Temperature** - The natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.

Temperature objectives for COLD interstate waters, WARM interstate waters, and Enclosed Bays and Estuaries are as specified in the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California* including any revisions. There are also temperature objectives for the Delta in the State Water Board's May 1991 *Water Quality Control Plan for Salinity*.

At no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature.

Temperature changes due to controllable factors shall be limited for the water bodies specified as described in the table below. To the extent of any conflict with the above, the more stringent objective applies.

In determining compliance with the water quality objectives for temperature, appropriate averaging periods may be applied provided that beneficial uses will be fully protected.

#### SPECIFIC TEMPERATURE OBJECTIVES

##### DATES

##### APPLICABLE WATER BODY

From 1 December to 15 March, the maximum temperature shall be 55°F.

From 16 March to 15 April, the maximum temperature shall be 60°F.

From 16 April to 15 May, the maximum temperature shall be 65°F.

From 16 May to 15 October, the maximum temperature shall be 70°F.

From 16 October to 15 November, the maximum temperature shall be 65°F.

From 16 November to 30 November, the maximum temperature shall be 60°F.

Sacramento River from its source to Box Canyon Reservoir; Sacramento River from Box Canyon Dam to Shasta Lake

The temperature in the epilimnion shall be less than or equal to 75°F or mean daily ambient air temperature, whichever is greater.

Lake Siskiyou

The temperature shall not be elevated above 56°F in the reach from Keswick Dam to Hamilton City nor above 68°F in the reach from Hamilton City to the I Street Bridge during periods when temperature increases will be detrimental to the fishery.

Sacramento River from  
Shasta Dam to  
I Street Bridge

**Turbidity** - For Folsom Lake and American River (Folsom Dam to Sacramento River), except for periods of storm runoff, the turbidity shall be less than or equal 10 NTUs. To the extent of any conflict with the general turbidity objective, the more stringent applies.

### **Water Quality Objectives from the Tulare Lake Basin Plan**

**Floating Material** - Waters shall not contain floating material, including but not limited to solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.

**Pesticides** - Waters shall not contain pesticides in concentrations that adversely affect beneficial uses. There shall be no increase in pesticide concentrations in bottom sediments or aquatic life that adversely affect beneficial uses. (For the purposes of this objective, the term pesticide is defined as any substance or mixture of substances used to control objectionable insects, weeds, rodents, fungi, or other forms of plant or animal life.) The Regional Water Board will consider all material and relevant information submitted by the discharger and other interested parties and numerical criteria and guidelines for detrimental levels of chemical constituents developed by the State Water Board, the California Office of Environmental Health Hazard Assessment, the California Department of Health Services, the U.S. Food and Drug Administration, the National Academy of Sciences, the U. S. Environmental Protection Agency, and other appropriate organizations to evaluate compliance with this objective.

At a minimum, waters designated MUN shall not contain concentrations of pesticide constituents in excess of the maximum contaminant levels (MCLs) specified in Table 64444- A (Organic Chemicals) of Section 64444 of Title 22 of the California Code of Regulations, which is incorporated by reference into this plan. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect. The Regional Water Board acknowledges that specific treatment requirements are imposed by state and federal drinking water regulations on the consumption of surface waters under specific circumstances. To ensure that waters do not contain chemical constituents in concentrations that adversely affect beneficial uses, the Regional Water Board may apply limits more stringent than MCLs.

In waters designated COLD, total identifiable chlorinated hydrocarbon pesticides shall not be present at concentrations detectable within the accuracy of analytical methods prescribed in Standard Methods for the Examination of Water and Wastewater, 18th Edition, or other equivalent methods approved by the Executive Officer.

**Temperature** - Natural temperatures of waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.

Temperature objectives for COLD interstate waters, WARM interstate waters, and Enclosed Bays and Estuaries are as specified in the Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California, including any revisions.

Elevated temperature wastes shall not cause the temperature of waters designated COLD or WARM to increase by more than 5°F above natural receiving water temperature.

In determining compliance with the above limits, the Regional Water Board may prescribe appropriate averaging periods provided that beneficial uses will be fully protected.

**Other Relevant Plans and Policies:**

State Board Resources Resolution 68-16, *Statement of Policy with Respect to Maintaining High Quality of Waters in California*

*Plan for California's Nonpoint Source Pollution Control Program*

**DEFINITIONS**

The following definitions apply to the Resolution, Conditional Waivers and Monitoring and Reporting Programs as the related to discharges from the Irrigated Lands as described in these documents.

1. Irrigated lands – Lands where water is applied for the purpose of producing crops, including field and tree crops, For the purpose of this Waiver, commercial nurseries, nursery stock production, managed wetlands and rice production are considered irrigated lands.
2. Irrigation return flow – Surface and subsurface water which leaves the field following application of irrigation water.
3. Tailwater – The runoff of irrigation water from the lower end of an irrigated field.
4. Operational spill – Irrigation water that is diverted from a source such as a river, but is discharged without being delivered to or used on an individual field.
5. Stormwater runoff – The runoff of precipitation from an irrigated field.

6. Subsurface drainage – Water generated by installing drainage systems to lower the water table below irrigated lands. This drainage can be generated by subsurface drainage systems, deep open drainage ditches or drainage wells.
7. Waters of the state – As defined in California Water Code section 13050. Any surface water or groundwater, including saline waters, within the boundaries of the state. This Resolution and Waiver regulate discharges from irrigated lands to surface waters.
8. Receiving waters - Surface waters that received discharges from irrigated lands.
9. Discharger - The owner and/or operator of irrigated lands that discharges irrigation tailwater, wastewater and/or stormwater to waters of the state.
10. Watershed Group - Any group of Dischargers and/or organizations that form to comply with this Waiver. Watershed Groups can be organized on a geographic basis or can be groups with other factors in common such as commodity groups.
11. Requirement of applicable water quality control plans - Water quality objective, prohibition, TMDL implementation plan, or other requirement contained in water quality control plans adopted by the Regional Board and approved according to applicable law. **Attachment A** may be revised periodically.
12. Monitoring - All types of monitoring undertaken in connection with determining water quality conditions and factors that may affect water quality conditions, including but not limited to, in-stream water quality monitoring undertaken in connection with agricultural activities, monitoring to identify short and long-term trends in water quality, active inspections of operations, management practice implementation and effectiveness monitoring.
13. Waste – As defined in California Water Code §13050. Includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers or whatever nature prior to, and for the purposes of, disposal. Waste specifically regulated by the Waiver includes: earthen materials, including soil, silt, sand, clay, rock; inorganic materials (such as metals, salts, boron, selenium, potassium, nitrogen, etc.); organic materials, such as pesticides that enter or threaten to enter into waters of the state. Examples of waste not specifically regulated under this Waiver include hazardous and human wastes.
14. All other terms shall have the same definitions as prescribed by the Porter-Cologne Water Quality Control Act (California Water Code Division 7), unless specified otherwise.

## ATTACHMENT B

RESOLUTION NO. R5-2003-  
CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS  
FOR DISCHARGES FROM IRRIGATED LANDS  
FOR WATERSHED GROUPS  
PURSUANT TO  
CALIFORNIA WATER CODE SECTION 13269

This Attachment B to Resolution No. R5-2003- constitutes a “Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands for Watershed Groups” (Waiver). This Waiver conditionally waives waste discharge requirements and reports of waste discharge for discharges (e.g. irrigation return flow, tailwater, operational spill(s), storm water runoff and subsurface drainage) from irrigated lands to surface waters within the Central Valley Region. This Waiver establishes conditions that Watershed Groups must implement to obtain coverage under and to be considered in compliance with the Waiver.

### A. Conditions - General

1. The Watershed Group shall comply with all conditions of this Waiver, including timely submittal of all technical reports specified in **Part B. Technical Reports**. Violations may result in enforcement action under the CWC, including Regional Board orders, the imposition of civil liability, cessation of coverage under this Waiver, or referral to the Attorney General.
2. The Reports submitted to comply with this Waiver, shall be signed by a representative authorized by the Watershed Group.
3. Any person signing a Report submitted as required by this Waiver makes the following certification, whether written or implied:

*“ I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment for violations.”*

4. Watershed Groups shall comply with Watershed Group Monitoring and Reporting Program No. R5-2003- , which is part of this Waiver, or as revised by the Executive Officer.
5. Watershed Groups shall implement management practices to improve and protect water quality and to achieve compliance with applicable water quality objectives identified in **Attachment A**.

6. Individual Dischargers of a Watershed Group shall not discharge any waste not specifically regulated by this Waiver. Waste specifically qualifying for conditional discharge under this Waiver includes: earthen materials, including soil, silt, sand, clay, rock; inorganic materials, (such as metals, salts, boron, selenium, potassium, nitrogen, etc.); organic materials, (such as organic pesticides) that enter or threaten to enter into waters of the state. Examples of waste not qualifying for conditional discharge under this Waiver include, hazardous waste and human waste.
7. Individual Dischargers of the Watershed Group shall allow Regional Board staff, upon reasonable notification, access onto the affected property to determine compliance with conditions of this Waiver. Watershed Groups shall notify the members of the Watershed Group that they shall allow Regional Board staff, upon reasonable notification, access onto the affected property to determine compliance with conditions of this Waiver.
8. Individual Dischargers of Watershed Groups shall not cause new discharges of wastes from irrigated lands that impair surface water quality. Member Dischargers of Watershed Groups shall not increase discharges of waste or add new wastes that impair surface waters not previously discharged by the individual Discharger.
9. The Watershed Group and/or individual Dischargers shall take all reasonable steps to prevent any discharge in violation of this Waiver.
10. The Watershed Group and/or individual Dischargers shall maintain in good working order and operate as efficiently as possible any facility, control system, including management practices and monitoring devices installed or used to achieve compliance with this Waiver.
11. The discharge of any waste not specifically regulated by this Waiver described herein is prohibited unless the Discharger complies with CWC section 13260(a) and the Regional Board either issues waste discharge requirements pursuant to CWC section 13263 or an individual waiver pursuant to CWC section 13269 or the time frames specified in CWC section 13264(a) have elapsed;

## **B. Technical Reports**

1. A Watershed Group, on behalf of individual Dischargers, seeking to discharge under this Waiver, shall submit a completed Notice of Intent (NOI), **Attachment D** on or before **1 November 2003**.
  - a. The NOI shall contain all of the information requested in Attachment D.
  - b. The NOI shall identify the representative authorized to sign reports submitted on behalf of the Watershed Group.
  - c. The NOI shall include a Membership Document. This document shall provide information for each individual Discharger including; the owner/operator, farm assessor parcel number(s), Section, Township and Range and closest surface water body. The Watershed

Group shall maintain necessary information to contact the member dischargers including phone number(s) and mailing addresses. This information shall be made available to the Regional Board upon written notice, if necessary, to address a specific water quality issue that is not adequately addressed by the Watershed Group.

2. A Watershed Group that submits an NOI shall, concurrently, submit a General Report.
  - a. The General Report shall identify the lead agencies and/or organizations that will develop a watershed or sub-watershed program, the key contact(s), a description of the watershed, and a commitment to work with the Regional Board to satisfy the conditions of this waiver.
  - b. The General Report shall provide a detailed map of the area included within the Watershed Group. The General Report and the map shall identify participating landowners and operators, Districts, etc. (member individual Dischargers) which discharge or threaten to discharge waste from irrigated lands to surface waters and are to be covered under the conditions of the Watershed Group Waiver.
  - c. The General Report shall identify the funding mechanisms that will support the Watershed Group administrative costs, water quality monitoring, management practice evaluation and development, and other costs necessary to ensure compliance with the Waiver.
3. Upon submittal of a complete and approved NOI, coverage under this Waiver will be extended to the Watershed Group when the Executive Officer issues a Notice of Applicability (NOA).
4. Each Watershed Group that receives an NOA shall submit and implement a Monitoring and Reporting Program Plan as specified in Watershed Groups Monitoring and Reporting Program Order No. R5-2003- . The purpose of the Monitoring and Reporting Program Plan is: to determine whether the discharge of waste from irrigated lands within the area included within the Watershed Group causes or contributes to exceedances of receiving water limitations or causes nuisance; to monitor the implementation of existing management practices to determine which are effective in meeting receiving water limitations; and to determine which management practices are most effective in reducing wastes discharged to surface waters from irrigated lands.
5. Each Watershed Group that receives an NOA shall submit an Annual Monitoring and Reporting Program Report as specified in Watershed Groups Monitoring and Reporting Program Order No. R5-2003- .
6. Upon a determination by either an individual Discharger or the Watershed Group that a discharge is causing or contributing to an exceedance of receiving water limitations specified in **Part C. Receiving Water Limitations** of this Waiver, the Watershed Group or individual Discharger shall promptly notify the Regional Board in writing. Based on this information or other information available to the Regional Board, the Watershed Group shall, upon written notice by the Regional

Board Executive Officer, submit a technical report called a Management Plan to the Regional Board as follows:

- a. The Management Plan shall evaluate the effectiveness of existing management practices in achieving water quality objectives and identify additional actions, including different or additional management practice implementation or education outreach, etc., the Watershed Group proposes to implement to achieve water quality objectives.
  - b. The Management Plan shall include a waste specific monitoring plan and an implementation schedule to address the exceedance.
  - c. The Watershed Group and/or individual Dischargers shall submit any modifications to the Management Plan required by the Regional Board and address the Regional Board's comments within 30 days of written notification unless otherwise directed by the Executive Officer.
  - d. The Watershed Group and/or individual Dischargers shall be make the Management Plan available to the public upon written request. The Regional Board may provide the public an opportunity to review and comment on submitted Management Plans.
  - e. The Management Plan may be incorporated into the annual Monitoring and Reporting Program report unless the Regional Board directs an earlier submittal.
7. Each Watershed Group that receives an NOA shall submit a Watershed Evaluation Report as provided in Watershed Group Monitoring and Reporting Program No. R5-2003- .
  8. If the Watershed Group wishes to terminate coverage under this Waiver, the Watershed Group shall submit a complete Notice of Termination (NOT), **Attachment E**. Termination from coverage will occur on the date specified in the NOT, unless specified otherwise. All discharges shall cease before the date of termination, and any discharges on or after this date shall be considered in violation of this Waiver, unless other Waiver of WDRs, General WDRs or individual WDRs cover the discharge.
  9. Except for material determined to be confidential in accordance with California law and regulations, all Reports submitted pursuant to this Waiver shall be available for public inspection at the Regional Board offices. NOI, General Reports and data on waste discharges, water quality, geology, and hydrology shall not be considered confidential.
  10. All Reports submitted pursuant to this Waiver are required pursuant to CWC section 13267. Failure to submit reports in accordance with schedules established by this Waiver, the attachments of this Waiver, or failure to submit a complete report (e.g., of sufficient technical quality to be acceptable to the Executive Officer), may subject the Discharger to enforcement action pursuant to CWC section 13268.

### C. Receiving Water Limitations

1. The following receiving water limitations are based upon water quality objectives contained in the **Attachment A**. As such, the following limitations are a required part of this Waiver. Individual Dischargers in Watershed Groups shall not cause:
  - a. Concentrations of dissolved oxygen to fall below 7.0 mg/l or 5.0 mg/l as specified in the Basin Plans.
  - b. Oils, greases, waxes, or other materials to form a visible film or coating on the water, surface or on the stream bottom.
  - c. The normal ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units.
  - d. Oils, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.
  - e. Aesthetically undesirable discoloration.
  - f. Fungi, slimes, or other objectionable growths.
  - g. The turbidity to increase as follows:
    1. More than 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs.
    2. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
    3. More than 10 NTUs where natural turbidity is between 50 and 100 NTUs.
    4. More than 10 percent where natural turbidity is greater than 100 NTUs.
  - h. Deposition of material that causes nuisance or adversely affects beneficial uses.
  - i. The normal ambient temperature to be altered more than 5°F.
  - j. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.
  - k. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in the California Code of Regulations, Title 22; that harm human, plant, animal or aquatic life; or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
  - l. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.
  - m. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.
  - n. Violation of any applicable water quality objective in the Regional Board's Basin Plans or any water quality standard for receiving waters adopted by the Regional Board or the State Board pursuant to the Clean Water Act and regulations adopted thereunder.

2. Watershed Groups and/or their member individual Dischargers shall comply with receiving water limitations. The Watershed Groups and/or individual Dischargers shall, through timely implementation of management practices, reduce wastes in the discharges in accordance with the conditions of this Waiver, including any modifications. Management practices shall be designed to improve and achieve compliance with receiving water limitations, to protect water quality, and prevent nuisance. If exceedance(s) of receiving water limitations persist notwithstanding implementation of management practices and other requirements of this Waiver, the Watershed Group shall submit a Management Plan as specified in Part B. Technical Reports of this Waiver.

#### **D. Time Schedule**

Pursuant to CWC Section 13267, the following reports are required to be submitted to the Regional Board on or before the dates in the time schedule below as a condition of the Waiver:

<b><u>Task</u></b>	<b><u>Compliance Date</u></b>
NOI, General Report <sup>1</sup>	<b>1 November 2003</b>
Watershed Evaluation Report <sup>1</sup>	<b>1 April 2004</b>
Monitoring and Reporting Program Plan	<b>1 April 2004</b>
Water quality or sediment sample collection shall begin by	<b>1 July 2004</b>
First Annual Monitoring and Reporting Program Report as required by the Watershed Group Monitoring and Reporting Program Order No. R5-2003- <sup>1</sup>	<b>1 April 2005</b>
Management Plan	<b>As required by the Executive Officer</b>

<sup>1</sup> NOI and the General Report submittal requirements are provided in the Waiver. The Watershed Evaluation and Monitoring and Reporting report requirements are provided in Watershed Group Monitoring and Reporting Program No. R5-2003-

## ATTACHMENT C

RESOLUTION NO. R5-2003-  
CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS  
FOR DISCHARGES FROM IRRIGATED LANDS  
FOR INDIVIDUAL DISCHARGERS  
PURSUANT TO  
CALIFORNIA WATER CODE SECTION 13269

This Attachment C to Resolution No. R5-2003- constitutes a “Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands for Individual Dischargers” (Waiver). This Waiver conditionally waives waste discharge requirements and reports of waste discharge for discharges (e.g. irrigation return flow, tailwater, operational spill(s), storm water runoff and subsurface drainage) from irrigated lands to surface waters within the Central Valley Region. This Waiver establishes conditions that individual Dischargers must implement to obtain coverage under and to be considered in compliance with the Waiver.

Individual Dischargers may be required to undertake additional actions to mitigate identified water quality impacts to improve and protect water quality. The Regional Board will work closely with those individual Dischargers to resolve water quality impairments.

### A. Conditions - General

1. Dischargers shall comply with all conditions of this Waiver, including timely submittal of all technical reports specified in **Part B. Technical Reports**. Violations may result in enforcement action under the CWC, including Regional Board orders, the imposition of civil liability, cessation of coverage under this Waiver, or referral to the Attorney General.
2. The Reports submitted to comply with this Waiver shall be signed by a representative authorized by the Discharger.
3. Any person signing a Report submitted as required by this Waiver makes the following certification, whether written or implied:

*“ I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment for violations.”*

4. Dischargers shall comply with Individual Discharger Monitoring and Reporting Program No. R5-2003- , which is part of this Waiver, or as revised by the Executive Officer.
5. Dischargers shall implement management practices to improve and protect water quality and to achieve compliance with applicable water quality objectives identified in **Attachment A**.

6. Dischargers shall not discharge any waste not specifically regulated by this Waiver. Waste specifically qualifying for conditional discharge under this Waiver includes: earthen materials, including soil, silt, sand, clay, rock; inorganic materials, (such as metals, salts, boron, selenium, potassium, nitrogen, etc.); organic materials, (such as organic pesticides) that enter or threaten to enter into waters of the state. Examples of waste not qualifying for conditional discharge under this Waiver include hazardous waste and human waste.
7. Dischargers shall allow Regional Board staff, upon reasonable notification, access onto the affected property to determine compliance with conditions of this Waiver.
8. Dischargers shall not cause new discharges of wastes from irrigated lands that impair surface water quality. Dischargers shall not increase discharges of waste or add new wastes that impair surface waters not previously discharged.
9. Dischargers shall take all reasonable steps to prevent any discharge in violation of this Waiver.
10. Dischargers shall maintain in good working order and operate as efficiently as possible any facility, control system, including management practices and monitoring devices installed or used to achieve compliance with this Waiver.
11. The discharge of any waste not specifically regulated by this Waiver described herein is prohibited unless the Discharger complies with CWC section 13260(a) and the Regional Board either issues waste discharge requirements pursuant to CWC section 13263 or an individual waiver pursuant to CWC section 13269 or the time frames specified in CWC section 13264(a) have elapsed.

## **B. Technical Reports**

1. A Discharger, seeking to discharge under the conditions of this Waiver, shall submit a completed Notice of Intent (NOI), **Attachment D** on or before **1 November 2003**.
  - a. The NOI shall contain all of the information requested in **Attachment D**.
  - b. If the Discharger will not be signing the reports, the NOI shall identify the representative authorized to sign reports submitted on behalf of the Discharger.
2. A Discharger that submits an NOI shall, concurrently, submit a General Report.
  - a. The General Report shall identify the owner/operator, farm location, the key contact(s), a description of nearby surface waters as required in this Waiver and **Attachment D**, and a commitment to satisfy the conditions of the Waiver.
  - b. The General Report shall provide a detailed map of the farm area. The General Report and map(s) shall identify the discharge points which discharge wastes as described in

this Waiver from irrigated lands to surface waters and are to be covered under the conditions of the individual Discharger Waiver.

- c. The General Report shall also identify and discuss the following: crops commonly grown; chemicals (pesticides, fertilizers, etc.) commonly applied in a manner that may result in the material coming in contact with irrigation water or stormwater; management practices utilized to reduce or eliminating the discharges of wastes to surface water which may impair water quality; names of water bodies receiving the discharge(s); details of any subsurface drainage collection system, and other information as requested by the Executive Officer.
3. Upon submittal of a complete and approved NOI, coverage under this Waiver will be extended to the Discharger when the Executive Officer issues a Notice of Applicability (NOA).
4. Each Discharger that receives an NOA shall submit and implement a Monitoring and Reporting Program Plan as specified in Individual Discharger Monitoring and Reporting Program Order No. R5-2003- . The purpose of the Monitoring and Reporting Program Plan is: to determine whether the discharge of waste from irrigated lands within the area included within the Watershed Group causes or contributes to exceedances of receiving water limitations or causes nuisance; to monitor the implementation of existing management practices to determine which are effective in meeting receiving water limitations; and to determine which management practices are most effective in reducing wastes discharged to surface waters from irrigated lands.
5. Each Discharger that receives an NOA shall submit an Annual Monitoring and Reporting Program Report as specified in Individual Discharger Monitoring and Reporting Program Order No. R5-2003- .
6. Upon a determination by the Discharger that a discharge is causing or contributing to an exceedance of receiving water limitations specified in **Part C. Receiving Water Limitations** of this Waiver, the Discharger shall promptly notify the Regional Board in writing. Based on this information or other information available to the Regional Board, the Discharger shall, upon written notice by the Regional Board Executive Officer, submit a technical report called a Management Plan to the Regional Board as follows:
  - a. The Management Plan shall evaluate the effectiveness of existing management practices in achieving water quality objectives and identify additional actions, including different or additional management practice implementation, etc., the Discharger proposes to implement to achieve water quality objectives.
  - b. The Management Plan shall include a waste specific monitoring plan and an implementation schedule to address the exceedance.

- c. The Dischargers shall submit any modifications to the Management Plan required by the Regional Water Board and address the Regional Board's comments within 30 days of written notification unless otherwise directed by the Executive Officer.
  - d. The Dischargers shall make the Management Plan available to the public upon written request. The Regional Board may provide the public an opportunity to review and comment on submitted Management Plans.
  - e. The Management Plan may be incorporated into the annual Monitoring and Reporting Program report unless the Regional Board directs an earlier submittal.
- 7. Each Discharger that receives an NOA shall submit a Watershed Evaluation Report as provided in Individual Discharger Monitoring and Reporting Program No. R5-2003- .
  - 8. If the Discharger wishes to terminate coverage under this Waiver, the Discharger shall submit a complete Notice of Termination (NOT), **Attachment E**. Termination from coverage will occur on the date specified in the NOT, unless specified otherwise. All discharges shall cease before the date of termination, and any discharges on or after this date shall be considered in violation of this Waiver, unless other Waiver of WDRs, General WDRs or individual WDRs cover the discharge.
  - 9. Except for material determined to be confidential in accordance with California law and regulations, all Reports submitted pursuant to this Waiver shall be available for public inspection at the Regional Board offices. NOI, General Reports and data on waste discharges, water quality, geology, and hydrology shall not be considered confidential.
  - 10. All Reports submitted pursuant to this Waiver are required pursuant to CWC section 13267. Failure to submit reports in accordance with schedules established by this Waiver, the attachments of this Waiver, or failure to submit a complete report (e.g., of sufficient technical quality to be acceptable to the Executive Officer), may subject the Discharger to enforcement action pursuant to CWC section 13268.

### **C. Receiving Water Limitations**

- 1. The following receiving water limitations are based upon water quality objectives contained in the **Attachment A**. As such, the following limitations are a required part of this Waiver. The Dischargers shall not cause:
  - a. Concentrations of dissolved oxygen to fall below 7.0 mg/l or 5.0 mg/l as specified in the Basin Plans.
  - b. Oils, greases, waxes, or other materials to form a visible film or coating on the water, surface or on the stream bottom.
  - c. The normal ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 units.

- d. Oils, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.
  - e. Aesthetically undesirable discoloration.
  - f. Fungi, slimes, or other objectionable growths.
  - g. The turbidity to increase as follows:
    - 1. More than 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs.
    - 2. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
    - 3. More than 10 NTUs where natural turbidity is between 50 and 100 NTUs.
    - 4. More than 10 percent where natural turbidity is greater than 100 NTUs.
  - h. Deposition of material that causes nuisance or adversely affects beneficial uses.
  - i. The normal ambient temperature to be altered more than 5°F.
  - j. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.
  - k. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in the California Code of Regulations, Title 22; that harm human, plant, animal or aquatic life; or that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
  - l. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.
  - m. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.
  - n. Violation of any applicable water quality objective in the Regional Board's Basin Plans or any water quality standard for receiving waters adopted by the Regional Board or the State Board pursuant to the Clean Water Act and regulations adopted thereunder.
2. Dischargers shall comply with receiving water limitations. Dischargers shall, through timely implementation of management practices, reduce wastes in the discharges in accordance with the conditions of this Waiver, including any modifications. Management practices shall be designed to improve and achieve compliance with receiving water limitations, to protect water quality, and prevent nuisance. If exceedance(s) of receiving water limitations persist notwithstanding implementation of management practices and other requirements of this Waiver, the Discharger shall submit a Management Plan as specified in Part B. Technical Reports of this Waiver.

#### **D. Time Schedule**

Pursuant to CWC Section 13267, the following reports are required to be submitted to the Regional Board on or before the dates in the time schedule below as a condition of the Waiver:

<b><u>Task</u></b>	<b><u>Compliance Date</u></b>
NOI, General Report <sup>1</sup>	<b>1 November 2003</b>
Watershed Evaluation Report <sup>1</sup>	<b>1 April 2004</b>
Monitoring and Reporting Program Plan	<b>1 April 2004</b>
Water quality or sediment sample collection shall begin by	<b>1 July 2004</b>
First Annual Monitoring and Reporting Program Report as required by the Individual Discharger Monitoring and Reporting Program Order No. R5-2003- <sup>1</sup>	<b>1 April 2005</b>
Management Plan	<b>As required by the Executive Officer</b>

-----  
<sup>1</sup> NOI and the General Report submittal requirements are provided in the Waiver. The Watershed Evaluation and Monitoring and Reporting report requirements are provided in Individual Discharger Monitoring and Reporting Program No. R5-2003-

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

**NOTICE OF INTENT**  
TO COMPLY WITH  
RESOLUTION NO. R5-2003-  
CONDITIONAL WAIVER OF  
WASTE DISCHARGE REQUIREMENTS  
FOR  
DISCHARGES FROM IRRIGATED LANDS

Check the box that applies:

- ☐ If filing for a Watershed Group check box and complete 1, 3, 4, 6 and 7.
- ☐ If filing for an Individual Discharger check box and complete to 2, 3, 4, 5, 6, 7.

**1. WATERSHED GROUP INFORMATION<sup>1</sup>**

Watershed:				
Watershed Group Representative:				
Mailing Address:				
City/Locale:	County:	State:	Zip:	Telephone Number:

<sup>1</sup> The Watershed Group representative's information shall be included in the above information box. A **Membership Document** shall be included with this NOI. This membership document shall provide information for each individual Discharger including; the owner/operator, farm assessor parcel number(s), Section, Township and Range and closest surface water body. A farm includes lands where water is applied for the purpose of producing crops and includes commercial nurseries, nursery stock production, managed wetlands and rice production. The Watershed Group shall maintain necessary information to contact the member dischargers including phone number(s) and mailing addresses. This information shall be made available to the Regional Board upon written notice in the event that a specific water quality issue cannot be adequately addressed by the Watershed Group.

**2. INDIVIDUAL DISCHARGER INFORMATION**

Discharger Name:				
Facility Name: <sup>2</sup>				
Physical Address:				
City/Locale:	County:	State:	Zip:	
Mailing Address:				
City/Locale:	County:	State:	Zip:	Telephone Number:
Assessor's Parcel #:		Closest Surface Water:		
Township/Range/Section: T ____ R ____ S ____ B&M				

<sup>2</sup> Facilities include lands where water is applied for the purpose of producing crops and includes commercial nurseries, nursery stock production, managed wetlands and rice production.

ATTACHMENT D  
NOTICE OF INTENT  
RESOLUTION NO. R5-2003-  
CONDITIONAL WAIVER OF  
WASTE DISCHARGE REQUIREMENTS  
FOR DISCHARGES FROM IRRIGATED LANDS

- 2 -

**3. TYPE OF DISCHARGE**

<input type="checkbox"/> Watershed Group	<input type="checkbox"/> Nurseries > 10 acres
<input type="checkbox"/> Farms > 200 acres	<input type="checkbox"/> Nurseries 10 acres
<input type="checkbox"/> Farms 200 acres	<input type="checkbox"/> Farms that discharge only stormwater
<input type="checkbox"/> Organic Farms > 500 acres	<input type="checkbox"/> Districts which have operational spills
<input type="checkbox"/> Organic Farms 500 acres	<input type="checkbox"/> Other:

**4. REASON FOR FILING**

<input type="checkbox"/> New Discharge or Farm/Watershed Group	<input type="checkbox"/> Changes in Ownership/Operator or addition of Discharger(s) to Watershed Group
<input type="checkbox"/> Existing Farm/Watershed Group	<input type="checkbox"/> Expiration of Waiver Date of Waiver:
<input type="checkbox"/> Expansion	<input type="checkbox"/> Other:

**5. FACILITY INFORMATION**

Type and Volume of Crops Produced Each Year:	
Acreage of Irrigated Lands:	
Source Water Supply:	Estimated Water Usage: Average: _____ Maximum: _____
Rainfall Information: Average: _____ in. 100 yr/24 hr event: _____ in. Source of Rainfall information: Tailwater Control: <input type="checkbox"/> Yes <input type="checkbox"/> No Stormwater Runoff: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Other Information:	

ATTACHMENT D  
NOTICE OF INTENT  
RESOLUTION NO. R5-2003-  
CONDITIONAL WAIVER OF  
WASTE DISCHARGE REQUIREMENTS  
FOR DISCHARGES FROM IRRIGATED LANDS

- 3 -

**6. ADDITIONAL INFORMATION**

Please attach the following information to this NOI:

1. A site map, which shows the boundaries of the Watershed Group or Individual Dischargers and identifies surface watercourses within 1,000 feet of the farm.
2. Use the space below, or attach additional sheets, to explain any response that needs clarification.


**7. CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Print Name: \_\_\_\_\_ Title: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

**NOTICE OF TERMINATION**  
TO COMPLY WITH  
RESOLUTION NO. R5-2003-  
CONDITIONAL WAIVER OF  
WASTE DISCHARGE REQUIREMENTS  
FOR  
DISCHARGES FROM IRRIGATED LANDS

This document is only to be used for Watershed Groups or Dischargers that have been issued a Notice of Applicability (NOA) by the Executive Officer. Submission of this Notice of Termination constitutes official notification to the Regional Board that the Watershed Group or farm identified below elects not be covered under Resolution No. R5-2003- , Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands

Check the box that applies:

- ☐ If filing for a Watershed Group check box and complete 1, 3, 4 and 5.
- ☐ If filing for an Individual Discharger please check and complete 2, 3, 4 and 5.

**1. WATERSHED GROUP INFORMATION<sup>1</sup>**

Watershed:				
Watershed Group Representative:				
Mailing Address:				
City/Locale:	County:	State:	Zip:	Telephone Number:

<sup>1</sup> The Watershed Group representative's information shall be included in the above information box. A **Membership Document** shall be included with this NOT. This membership document shall provide information for each individual Discharger including; the owner/operator, farm assessor parcel number(s), Section, Township and Range and closest surface water body. A farm includes lands where water is applied for the purpose of producing crops and includes commercial nurseries, nursery stock production, managed wetlands and rice production.

**2. INDIVIDUAL DISCHARGER INFORMATION**

Discharger Name:				
Facility Name: <sup>2</sup>				
Physical Address:				
City/Locale:	County:	State:	Zip:	
Mailing Address:				
City/Locale:	County:	State:	Zip:	Telephone Number:

<sup>2</sup> Facilities include lands where water is applied for the purpose of producing crops and includes commercial nurseries, nursery stock production, managed wetlands and rice production.

ATTACHMENT E  
NOTICE OF TERMINATION  
RESOLUTION NO. R5-2003-  
CONDITIONAL WAIVER OF  
WASTE DISCHARGE REQUIREMENTS  
FOR DISCHARGES FROM IRRIGATED LANDS

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**3. LOCATION OF FACILITY**

Assessor's Parcel #:	Closest Surface Water: (e.g. Sacramento River)
Township/Range/Section:  T ____ R ____ S ____ B&M	

**4. REASON FOR TERMINATION**

<input type="checkbox"/> Watershed Group no longer functioning under the Watershed Group Conditional Waiver	<input type="checkbox"/> Farm has been sold
<input type="checkbox"/> Farm no longer discharging in a manner which is subject to the Conditional Waiver	<input type="checkbox"/> Closed Farm
	<input type="checkbox"/> Other: Provide Comments _____

**5. CERTIFICATION**

<p>I certify under penalty of law that (1) I am not required to be covered under the Conditional Waiver of Waste Discharge Requirements For Discharges From Irrigated Lands Within The Central Valley Region, and (2) this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. I also understand that submittal of this Notice of Termination does not release a facility from liability for any violations of the Conditional Waiver.</p>	
Print Name: _____	Title: _____
Signature: _____	Date: _____

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM  
ORDER NO. R5-2003-  
FOR  
WATERSHED GROUPS  
UNDER  
CONDITIONAL WAIVER OF  
WASTE DISCHARGE REQUIREMENTS  
FOR  
DISCHARGES FROM IRRIGATED LANDS

As conditioned by the *Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands (Waiver) Resolution No. R5-2003- \_\_\_\_*, Watershed Groups shall develop a monitoring program to assess the sources and impacts of waste in discharges from irrigated lands, and where necessary, to track progress in reducing the amount of waste discharged that affects the quality of the waters of the state and its beneficial uses.

The Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) adopts this MRP pursuant to Water Code Section 13267. The Watershed Groups represent individual dischargers that discharge waste to waters of the state. The reports required by this Order are needed to evaluate impacts of discharges of waste to waters of the state and to determine compliance with the Waiver. The Regional Board Executive Officer may revise the MRP as appropriate. Watershed groups shall comply with the MRP as revised by the Executive Officer.

The purpose of this Monitoring and Reporting Program (MRP) is to describe the minimum requirements for an acceptable Watershed Group Monitoring and Reporting Program Plan (MRP Plan). The purpose of the MRP Plan shall be to monitor the discharge of wastes in irrigation return flows and stormwater from irrigated lands that are enrolled under the Waiver. The Watershed Group shall prepare and submit to the Regional Board for review and approval by the Executive Officer an MRP Plan that meets the minimum requirements of the MRP and includes sites to be monitored, frequency of monitoring, parameters to be monitored, and documentation of monitoring protocols. The Executive Officer will review the MRP Plan to determine if it meets or exceeds the minimum requirements of this Order. The submittal of a MRP Plan is a condition of the Waiver.

The development of a science-based water quality monitoring program is critical for determining actual and potential impacts of discharges of waste from irrigated lands on beneficial uses of water in the Central Valley Region. Determining the existing ecological conditions of agriculturally dominated water bodies is a critical goal of a water quality monitoring program and should be achieved by multiple assessment tools such as toxicity, chemical monitoring, and bioassessments.<sup>1</sup>

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<sup>1</sup> Letter to Art Baggett and Thomas Pinkos from Don Gordon, Agricultural Council of California, August 5, 2002.

## **I. MONITORING AND REPORTING PROGRAM REQUIREMENTS**

The Watershed Group shall submit to the Regional Board a detailed MRP Plan that supports the development and implementation and demonstrates the effectiveness of the Watershed program to comply with conditions of the Waiver.

The MRP Plan shall be designed to achieve the following objectives as a condition of the Waiver:

- a. Assess the impacts of waste discharges from irrigated lands to surface water;
- b. Determine the degree of implementation of management practices to reduce discharge of specific wastes that impact water quality;
- c. Determine the effectiveness of management practices and strategies to reduce discharges of wastes that impact water quality;
- d. Determine concentration and load of waste in these discharges to surface waters; and
- e. Evaluate compliance with existing narrative and numeric water quality objectives to determine if additional implementation of management practices are necessary to improve and/or protect water quality.

In order to focus the monitoring effort in a cost effective manner, a phased process is needed for the use of various assessment tools (i.e. chemical monitoring, toxicity testing, and bioassessments). A recent conference sponsored by the California Water Institute entitled “*Understanding Surface Water Monitoring Requirements*” provides excellent guidance on the use of various monitoring tools (California Water Institute, 2002).

### **1. Types of Monitoring and Evaluation**

To achieve the objectives of the MRP, at a minimum, the Watershed Group shall conduct the types of monitoring and evaluation listed below. The monitoring will be conducted during different phases of the monitoring and requirement program.

- a. Toxicity Testing;
- b. Water Quality (constituents listed in Table 1) and Flow Monitoring;
- c. Pesticide Use Evaluation; and
- d. Evaluation of the effectiveness of management practices and tracking levels of implementation in the watershed.

- Toxicity Testing

Activities within the watershed and the use of the receiving waters must be evaluated using aquatic toxicity testing. The purpose of the toxicity testing is to evaluate compliance with the narrative toxicity objective, to identify the causes (e.g., sediment, contaminants, salt, etc.) of toxicity observed, and to determine the sources of the toxicants identified.

- Water Quality and Flow Monitoring

Such monitoring is used to assess the sources of wastes and loads in discharges from irrigated lands to surface waters, and to evaluate the performance of management practice implementation efforts. Monitoring data shall be compared to existing numeric and narrative water quality objectives.

- Pesticide Use Evaluation

The most significant factors influencing the amount of pesticides in surface waters are the timing of pesticide applications, the application rates, the amounts of pesticide applied, and the points of application (all of these factors can be referred to as "use pattern"). This information can be found in the pesticide use reports submitted by the applicators to the County Agricultural Commissioners and Department of Pesticide Regulations (DPR). Changes in pesticide concentrations at specific monitoring sites in the waterbodies need to be compared to pesticide use patterns in land areas upstream of the monitoring sites. By comparing these changes, it may be determined how changing the pesticide use patterns could impact water quality. Changing pesticide use patterns can also provide an indicator of the degree of implementation of certain management practices.

- Management Practice Effectiveness and Implementation Tracking

Information must be collected from Dischargers on the type of management practices that are being used, the degree to which they are being implemented within the watershed, and how effective they are in protecting waters of the state. Data should be collected in four broad areas; 1) pesticide mixing, loading, and application practices; 2) pest management practices; 3) management practices to address others wastes (salt, sediment, nitrogen, etc.), and 4) cultural practices. This information may be used to compare the effectiveness of management practices in reducing loading of constituents of concern.

## 2. Monitoring Phases

The MRP Plan shall describe a phased monitoring approach and provide documentation to support the proposed monitoring program. The program shall not consist of more than three phases. Phase 1 monitoring shall, at a minimum, include analyses of physical parameters, drinking water constituents, pesticide use evaluation, and toxicity testing. Phase 2 monitoring includes chemical analyses of constituents that were identified in toxicity testing in phase one that may include pesticides, metals and nutrients and, additional monitoring site in the watershed. Phase 3 monitoring includes management practice effectiveness and implementation tracking and additional water quality monitoring sites in the upper portions of the watershed.

### A. Monitoring Phase 1

Monitoring Phase 1 shall include analyses of physical parameters, drinking water constituents, pesticide use evaluation, and toxicity testing. General water quality parameters such as temperature, electrical conductivity, pH, and dissolved oxygen indicate contaminants in the watershed. Pesticide Use Evaluation must be conducted to determine the pesticide use pattern in land areas upstream of the monitoring sites. This will also identify the types of pesticides used in the watershed to assist in determining the selection of appropriate species for toxicity testing. Acute toxicity testing shall be conducted using the invertebrate, *Ceriodaphnia dubia*, and the larval fathead minnow, *Pimephales promelas*, according to standard USEPA acute toxicity test methods<sup>2</sup>. In addition, to identify toxicity caused by herbicides, 96-hr toxicity tests with the green algae, *Selenastrum capricornutum*, shall be conducted<sup>3</sup>. The water column toxicity testing will be used as an indicator for wastes that are water-soluble. Sediment toxicity testing using the invertebrate species *Hyaella azteca* or *Chironomus tentans* according to USEPA methods<sup>4</sup> shall be conducted for hydrophobic (sediment bound) wastes that are present in the waterbody.

For this initial screening, 100% (undiluted) sample shall be tested. If 100% test organism mortality is detected within 24 hours during the initial screening toxicity test, then a multiple dilution test including a minimum of five sample dilutions shall be conducted to determine the magnitude of the toxic response.

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<sup>2</sup> USEPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. Office of Water, Washington, D.C. EPA-821-R-02-012.

<sup>3</sup> USEPA. 2002. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition. Office of Water, Washington, D.C. EPA-821-R-02-013.

<sup>4</sup> USEPA. 1994. Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates. Office of Research and Development, Washington, D.C. EPA-600-R-94-024.

Further, if toxicity is detected during the initial screening test, then Toxicity Identification Evaluation<sup>5</sup> (TIE) and chemical monitoring shall be conducted to determine the cause of toxicity. At a minimum, a Phase I TIE<sup>6</sup> should be conducted to determine the general class (i.e., metals, non-polar organics such as pesticides, surfactants, etc.) of chemical causing toxicity. This minimum TIE effort will determine the type of chemical monitoring necessary to identify the specific agents causing toxicity. Phase II<sup>7</sup> TIEs may also be utilized to identify specific toxic agents.

In addition to TIEs, sites identified, as toxic in the initial screen shall be re-sampled to estimate the duration of the toxicant in the waterbody. Additional samples collected upstream of the original site should also be collected to determine the potential source(s) of the toxicant in the watershed.

Information must be collected from dischargers on the type of management practices that are being used, the degree to which they are being implemented within the watershed, and how effective they are in protecting waters of the state through all phases of monitoring.

## **B. Monitoring Phase 2**

Monitoring Phase 2 will include general physical parameters, pesticide use evaluation, and chemical analyses of pesticides, metals, and nutrients. Phase 2 will be designed based on the results of phase 1 monitoring. It is expected that this phase will begin no later than 2 year after the start of the first phase. This phase of monitoring will include general water quality parameters such as temperature, electrical conductivity, pH, and dissolved oxygen to indicate contaminants in the watershed. Pesticide Use Evaluation must be conducted to determine the pesticide use pattern and changes in land areas upstream of the monitoring sites. This will also identify any additional or new pesticides used in the watershed to be monitored. Chemical analyses will be conducted in Phase 2 to assess the sources of waste and pesticide loads in discharges from irrigated lands to surface waters, and to evaluate performance of management practice implementation efforts. Wastes include the constituents that cause toxicity in Phase 1 monitoring.

Information must be collected from dischargers on the type of management practices that are being used, the degree to which they are being implemented

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<sup>5</sup> A TIE is a set of sample manipulation procedures designed to identify the specific causative agent(s) responsible for the observed toxicity.

<sup>6</sup> USEPA. 1998. Methods for Aquatic Toxicity Identification Evaluations. Phase I Toxicity Characterization Procedures. Office of Research and Development, Duluth, MN. EPA-600-3-88-034.

<sup>7</sup> USEPA. 1998. Methods for Aquatic Toxicity Identification Evaluations. Phase II Toxicity Identification Procedures. Office of Research and Development, Duluth, MN. EPA-600-3-88-035.

within the watershed, and how effective they are in protecting waters of the state through all phases of monitoring.

### **C. Monitoring Phase 3**

Phase 3 shall determine statistically significant changes in waste concentrations based on various management practices. Phase 3 monitoring shall begin no later than two years from the start of Phase 2 monitoring. This phase of monitoring will include general water quality parameters such as temperature, electrical conductivity, pH, and dissolved oxygen to indicate contaminants in the watershed. Pesticide Use Evaluation must be conducted to determine the pesticide use pattern and changes in land areas upstream of the monitoring sites. Information collected from dischargers on the type of management practices that are being used, the degree to which they are being implemented within the watershed, and how effective they are in protecting waters of the state through the previous phases of monitoring. Due to the various land use patterns and rainfall/runoff factors that can affect waste concentrations on an annual basis, it may be difficult to determine success (waste reductions) from single or multiple management practices based on only a year of sampling. Phase 3 shall determine if statistically significant changes in waste concentrations result from the implementation of various management practices. Data should be collected in four broad areas; 1) pesticide mixing, loading, and application practices; 2) pest management practices; 3) management practices to address waste (salt, sediment, nitrogen, etc.), and 4) cultural practices. This information may be used to compare the effectiveness of management practices in reducing waste loads.

Based on the results of the data collected during the three phases of monitoring, any of the above types of monitoring may be required to be repeated at a specific site or watershed.

### **3. Historical Data**

Historical water quality data has been used for listing various water bodies as impaired. Therefore, synthesis and statistical analysis of all historical data by site and date is a critical first step for designing a science based monitoring program in a watershed. Historical analysis will provide a benchmark for measuring change (progress) in reducing concentrations of wastes due to management practices and will provide rationale for the site selection process (i.e. continue to monitor sites with extensive temporal data for a wastes or water quality parameters). It is also possible that spatial analysis of historical data will reveal sites where data are lacking and that should be monitored in the future. Watershed groups shall collect and review historical data for all wastes in the various watersheds in advance of developing monitoring designs. This critical initial step in

developing a monitoring plan will focus the study, provide rationale for the site selection process, and reduce costs.

Watershed groups are encouraged to review the on going monitoring in the watershed and coordinate the monitoring effort to avoid duplication.

#### 4. Minimum Requirements

The following table lists the minimum requirements for the constituents to be monitored by the Watershed Group.

**Table 1. Constituents to be monitored**

Constituent	Quantitaion Limit	Reporting Unit	Monitoring Phase
<b>Physical Parameters</b>			
Flow	N/A	CFS (Ft <sup>3</sup> /Sec)	Phase 1, 2 & 3
pH	N/A	pH	Phase 1, 2 & 3
Electrical Conductivity	N/A	µmhos/cm	Phase 1, 2 & 3
Dissolved Oxygen	N/A	mg O <sub>2</sub> /L	Phase 1, 2 & 3
Temperature	N/A	Degrees Celsius	Phase 1, 2 & 3
Color	N/A	ADMI	Phase 1, 2 & 3
Turbidity	N/A	NTUs	Phase 1, 2 & 3
Total Dissolve Solids	N/A	mg/L	Phase 1, 2 & 3
Total Organic Carbon	N/A	mg/L	Phase 1, 2 & 3
<b>Drinking Water :</b>			
E Coli	(b)	ug/L	Phase 1
Total Organic Carbon	(b)	ug/L	Phase 1
Chroform	(b)	ug/L	Phase 1
Bromoform	(b)	ug/L	Phase 1
Dibromochloromethan	(b)	ug/L	Phase 1
Bromodichlormethan	(b)	ug/L	Phase 1
<b>Toxicity Test</b>			
Water Column Toxicity			Phase 1
Sediment Toxicity			Phase 1
<b>Pesticides <sup>(a)</sup></b>			
Carbamates	(b)	ug/L	Phase 2
Organochlorines	(b)	ug/L	Phase 2
Organophosphorus	(b)	ug/L	Phase 2
Pyrethroids	(b)	ug/L	Phase 2
Herbicides	(b)	ug/L	Phase 2
<b>Metals (a)</b>			
Cadmium	(b)	ug/L	Phase 2
Copper	(b)	ug/L	Phase 2
Lead	(b)	ug/L	Phase 2
Nickel	(b)	ug/L	Phase 2
Zinc	(b)	ug/L	Phase 2

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Constituent	Quantitation Limit	Reporting Unit	Monitoring Phase
Selenium	(b)	ug/L	Phase 2
Arsenic	(b)	ug/L	Phase 2
Boron	(b)	ug/L	Phase 2
<b>Nutrients (a)</b>			
Total Kjeldahl Nitrogen	(b)	mg/L	Phase 2
Phosphorus	(b)	ug/L	Phase 2
Potassium	(b)	ug/L	Phase 2

<sup>a</sup> In addition to TIEs, sites identified as toxic in the initial screen shall be re-sampled to estimate the duration of the toxicant in the waterbody. Additional samples upstream of the original site should also be collected to determine the potential source(s) of the toxicant in the watershed

<sup>b</sup> Quantitation limits must be lower than LC50 or other applicable federal or state toxic or risk limits.

The MRP Plan must include a sufficient number of monitoring sites and surface water flow monitoring for each location to allow calculation of the load discharged for every parameter monitored.

Method detection limits and practical quantitation limits shall be reported. All peaks detected on chromatograms shall be reported, including those, which cannot be, quantified and/or specifically identified. The Watershed Group shall use US EPA approved methods, provided the method can achieve method detection limits equal to or lower than analytical methods quantitation limits specified in this Order.

At a minimum, the MRP Plan must clearly demonstrate (1) compliance with requirement of all phases of monitoring as described in this MRP (2) sufficient number of monitoring sites based on acreages and watershed characteristics, flow monitoring, and frequency of sample collection to allow for the calculation of load discharged for every waste parameter monitored; and (3). The use of proper sampling techniques and laboratory procedures to ensure a sample is representative of the site and is performed in the laboratory using approved methodologies

Bioassessment monitoring protocols are at the developing phase and there are no Basin Plan requirements or standards addressing the results of bioassessment monitoring. Watershed groups are encouraged to conduct Bioassessments to collect data that may be used as reference sites and provide information for scientific and policy decision making in the future. Bioassessments may serve monitoring needs through three primary functions: (1) screening or initial assessment of conditions; (2) characterization of impairment and diagnosis; and (3) trend monitoring to evaluate improvements through the implementation of management practices. Bioassessment data from all Wadeable Impaired Water Bodies may serve as an excellent benchmark for measuring both current biological conditions and success of management practices.

### **Watershed Specific Requirements**

The watershed specific requirements include watershed constituents of concern based on the characteristics of the watershed and the receiving water quality conditions. Some watersheds may need to conduct more extensive toxicity testing if toxicity has been documented by previous monitoring or increase the number of monitoring sites. Watershed specific requirements will include follow up analyses on specific constituents of concern, e.g., specific metals or pesticides.

#### **5. Flow Monitoring**

Representative flow measurements shall be obtained at each sample location during each sampling event. Additionally, the presence or absence of flow at each sample site shall be noted at a sufficient frequency to determine the quantity discharged during the irrigation season. The MRP Plan shall record the time, date, and location of each flow measurement or observation (absences) on field data sheets. Discharge flow monitoring shall be conducted and shall be reported in cubic feet per second (cfs).

#### **6. Monitoring Seasons**

Monitoring required in Section 1 “Monitoring Types” shall be conducted during the irrigation season and storm season, which coincides with the orchard dormant spray application. In general, the irrigation season is March through August, but may start as early as February and extends to October. The storm season is December through February, but may include November and March. The MRP Plan shall describe the phased monitoring program for irrigation and storm seasons

Each phase of monitoring shall include monitoring of two major storm events during one storm season and monthly sampling during one irrigation season followed by collection and evaluation of data. Data must be submitted to Executive Officer for review and approval. The Watershed Group shall design a monitoring phase based on the results of the previous phase. A revised MRP Plan shall be submitted for each phase for approval by the Executive Officer.

#### **7. Monitoring Schedule**

The MRP Plan shall be carried out using a systematic schedule. The MRP Plan should indicate the start date, identify time of the year, identify when field studies will take place, define the frequency of sampling, and indicate when the field studies end. Timing, duration, and frequency of sampling should be based on the complexity, hydrology, and size of the waterbody. Historical data must be reviewed to assist with determining some of these factors. The MRP Plan must

include a sufficient number of monitoring sites and surface water flow monitoring for each location to allow calculation of the load discharged for appropriate parameters to achieve the objective identified in Section I. *MONITORING AND REPORTING PROGRAM REQUIREMENTS* above.

At a minimum, each phase of the above referenced monitoring shall be conducted during two major storm events and after storm events, and monthly sampling during the peak irrigation season for one year, unless otherwise approved by the Executive Officer.

## **8. Monitoring Sites**

The MRP plan shall describe the study area, sampling sites, sampling locations, GPS coordinates, land use in the watershed, the chemicals being used, and the existing management practices in the watershed. The numbers and locations of sites must be based on specific watershed characteristics and be supported by a detailed discussion of these characteristics. Monitoring sites shall be selected for various watersheds based on size and flow of waterbodies (mainstem river, tributaries and agricultural drainage), land use (e.g., agricultural activities and pesticide use). Monitoring sites must be established initially on the water bodies that are carrying agricultural drainage into natural waterbodies. If results indicate that water quality objectives are exceeded at any site, monitoring for the constituents of concern (constituents exceeded water quality objectives) shall continue and the monitoring must be expanded upstream in a systematic search for sources. All major drainages must be part of baseline monitoring. At least 20% of the intermediate drainages must be monitored during the first year and the second 20%, the second year, etc. Smaller drainages will be monitored if the evaluation of data from the larger drainages or receiving water indicates water quality problems. The major, intermediate and small drainages based on hydrology, size and flow of the water bodies are different for each watershed. Therefore, watershed groups shall provide scientific rationale for the site selection process based on historical and on-going monitoring and drainage size and land use. The size of major, intermediate and small drainages within the sub watershed shall be discussed in the MRP Plan and how the size of these drainages was used to develop the monitoring sites. Monitoring sites should not include main-stem water bodies already on the Clean Water Act section 303(d) listed water body. These sites should be monitored only to determine the degree of implementation of management practices to reduce discharge of COC listed on 303(d). The initial focus of the MRP Plan shall be on water bodies that carry agricultural drainage or are dominated by agricultural drainage. A map showing the monitoring sites shall be provided with the MRP Plan.

## **II. QUALITY ASSURANCE PROJECT PLAN (QAPP)**

To create a sound and consistent watershed or regional MRP Plan, it is important to develop monitoring protocols and a monitoring plan for the evaluation of water quality data. A QAPP must be developed by the Watershed Group to include watershed and site-specific information, project organization and responsibilities, and quality assurance components of the monitoring program. StateWide Ambient Monitoring Program (SWAMP) QAPP is a comprehensive quality assurance plan that includes many of the elements required under this MRP. **Attachment A** presents the MRP QAPP Requirements and the outline for development of the monitoring QAPP. The QAPP includes the laboratory and field requirements to be used for data evaluation. Watershed Groups may use the SWAMP QAPP as an available resource and add the site-specific requirements and any other elements that are required under this MRP. A Watershed specific QAPP is required to be submitted with the Watershed Evaluation Report. The Watershed Evaluation Report is a condition of the Conditional Waiver.

## **III. REPORTING REQUIREMENTS**

Pursuant to California Water Code (CWC) Section 13267, the following Reports are required to be submitted to the Regional Board by the time schedule identified below.

### **A. Watershed Evaluation Report**

**DUE: 1 April 2004**

The Watershed group shall compile a Watershed Evaluation Report containing the following information:

#### **1. Watershed Setting**

- Map(s) of watershed area showing irrigated lands (including crop type), drainage and discharge locations. Maps or discussion shall provide details of the watershed showing which fields are served by each drain.
- Information on crops grown in the watershed or subwatershed area, production practices, chemicals used and application methods (including timing of application) within the watershed and other factors that may impact the quality of discharges.
- Inventory of management practices that are in place and which practices are effective pollution control measures.
- Historical water quality monitoring results Documentation of existing receiving water quality data and quality of typical irrigation discharges.
- Known water quality issues, water quality limited waterbodies, and potential water quality problems.
- Known programs addressing the water quality issues associated with discharges from irrigated lands. Discussion of practices in use and available

programs to address problems from irrigated agricultural discharges (e.g. tailwater return systems, irrigation efficiency improvements, UC Coop Ext. and NRCS grower outreach, EQIP, etc.).

## **2. Watershed Priorities**

Based on the information available, the watershed group shall identify its priorities with respect to work on specific subwatersheds and water quality parameters.

## **3. Management Practices**

The Watershed Group shall be responsible for monitoring the success of identified management practices through the MRP Plan as well as the evaluation of the management practices. The report shall provide an implementation plan for management practices in the watershed. The report shall also identify pilot projects for the implementation of management practices on prioritized sub-watersheds.

### **3.1 Implementation Plan**

The Watershed Group shall develop an implementation plan to identify and track the progress of water quality management practices within the watershed. This plan may address water quality issues related to the discharge of irrigation return flows separately from stormwater discharges and shall include a schedule for implementation of management practices that may include, but is not limited to, grower education, technical and financial assistance.

### **3.2 Communication Report**

When monitoring results indicate that water quality objectives are exceeded in the surface waters of the Watershed Group area, the Watershed Group shall submit a Communication Report describing how it will evaluate the effectiveness of one or more management practice(s) at preventing discharges of COCs to surface waters. The selection of management practice evaluation projects shall include consideration of the contribution of target COCs to known water quality impairments, potential application of the management practices over a broad geographic area and large spectrum of crops, and ease and immediacy of possible implementation. Projects need not involve new practices, but can involve quantification of benefits of existing practices. Communication Report shall be submitted for each proposed, implemented, or completed project and shall include, at a minimum: description of management practice(s) being evaluated, target chemical(s), reasons for selecting the specific project, methodology for evaluating the effectiveness of the practice (including sampling and QA/QC

plans), and involvement by stakeholders and agencies in developing, implementing and evaluating the project. If projects are completed, the Communication Report shall present the conclusion(s) of the evaluation project.

**B. Monitoring and Reporting Program Plan** **Due: 1 April 2004**

The MRP Plan must include the components of the monitoring program as stated in this Order. The MRP Plan shall specify all quality assurance elements including the US EPA test method and detection limits for the required constituents as specified in the QAPP for Monitoring Program Requirements, **Attachment A**. At a minimum, the MRP Plan shall include the following elements:

1. Description of the Watershed including characteristics relevant to the monitoring;
2. Summary of the historical data and on-going monitoring;
3. Description of Monitoring Phases;
4. Monitoring sites;
5. Land Use description;
6. Sampling locations;
7. Detailed maps showing the land use and sampling locations;
8. Monitoring periods including monitoring events and frequencies of monitoring during each event;
9. Monitoring parameters;
10. parameters to be monitored including minimum and site specific requirements as described here;
11. A QAPP consistent with the requirements described in **Attachment A**;
12. Documentation of monitoring protocols including sample collection methods and laboratory quality assurance manual;
13. Laboratory Quality Assurance manual must describe analytical methods; internal quality control (QC) samples, frequency of QC sample analyses and acceptance criteria; calibration procedures and acceptance criteria; instrumentation and, other technical capabilities of the laboratory; and
14. Watershed contact information.

**C. Annual Monitoring Report** **Due: Annual, 1 March**

The Annual Monitoring Report (AMR) shall be prepared after field monitoring events have been completed and includes a review of the monitoring program including the results of the data collected and data evaluation. The AMR shall include the following components:

1. Title page;
2. Table of contents;
3. Description of the watershed
4. Monitoring objectives;
5. Sampling site descriptions;
6. Location map of sampling sites and land use;
7. Tabulated results of analyses;
8. Sampling and analytical methods used
9. Copy of chain of custodies;
10. Associated laboratory and field quality control samples results;
11. Summary of precision and accuracy;
12. Pesticide Use Information;
13. Data interpretation including assessment of data quality objectives;
14. Summary of management practices used;
15. Actions taken to address water quality impacts identified, including but not limited to, revised or additional management practices to be implemented;
16. Communication Report; and
17. Conclusions and recommendations.

Copies of all field documentation and laboratory original data must be included in the annual monitoring report as attachments. The AMR should also provide a perspective of the field conditions including a description of the weather, rainfall, temperature, stream flow, color of the water, odor, and other relevant information that can help in data interpretation.

In reporting monitoring data, the Watershed Groups shall arrange the data in tabular form so that the required information is readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with the Waiver.

A transmittal letter shall accompany each report. This letter shall include a discussion of any violations of the Waiver found during the reporting period, and actions taken or planned for correcting noted violations, such as operational, field or facility modifications. If the Watershed Group has previously submitted a Communication Report describing actions and/or a time schedule for implementing the corrective actions, reference to the previous correspondence will be satisfactory. The transmittal letter shall be signed and contain a penalty of perjury statement by the Watershed Group, or the Watershed Group's authorized agent. This statement shall state:

*"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate,*

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*and complete. I am aware that there are significant penalties for knowingly submitting false information, including the possibility of fine and imprisonment for violations.”*

The Regional Board may request Watershed Groups and/or individual Dischargers to take additional actions if monitoring data indicates the water quality objectives are exceeded in surface waters.

The Watershed Group, on behalf of the individual member dischargers, shall implement the above monitoring program as of the date of this Order.

Ordered by: \_\_\_\_\_  
THOMAS R. PINKOS, Executive Officer

\_\_\_\_\_  
(Date)

**Attachment A** – Conditional Waiver Of Waste Discharge Requirements For Discharges From Irrigated Lands Conditional Waiver No. R5-2003- , Watershed Monitoring And Reporting Program, Quality Assurance Project Plan

CONDITIONAL WAIVER OF  
WASTE DISCHARGE REQUIREMENTS  
FOR  
DISCHARGES FROM IRRIGATED LANDS  
CONDITIONAL WAIVER

WATERSHED MONITORING AND REPORTING PROGRAM  
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**QUALITY ASSURANCE PROJECT PLAN**

**1.0 INTRODUCTION**

A Quality Assurance Project Plan (QAPP) shall be developed by the Watershed Group and shall include site-specific information and field and laboratory quality assurance requirements. This document identifies the major elements of the quality assurance and quality control components that need to be described in the QAPP. The QAPP shall be submitted to the Regional Board for review and approval.

**2.0 OBJECTIVE**

The objective of this document is to identify the quality assurance components that should be included in the QAPP for the watershed monitoring. A QAPP contains the requirements and criteria for the field and laboratory procedures used during planning and implementation of the monitoring program. These requirements and criteria shall be presented as a set of procedures to assure that the data collected during a monitoring program represents, as closely as possible, *in situ* conditions of the watersheds. This objective will be achieved by using accepted methodology (e.g., U.S. EPA) to collect and analyze water, sediment, and biota samples. The program's ability to meet this objective will be assessed by evaluating the laboratory results in terms of detection limits, precision, accuracy, comparability, representativeness, and completeness. This document provides a description of major elements of the field and laboratory quality assurance components.

**3.0 WHAT SHOULD BE INCLUDED IN THE QAPP**

A monitoring QAPP should include Project Management information e.g., project organization and responsibilities, project schedule, and the quality assurance components of the field and laboratory activities. The elements described in this document will provide the framework for developing a QAPP. These elements describe the field and laboratory elements of a QAPP and the requirements that are set forth by the Regional Board. QAPP for the watershed monitoring must include all the required components as listed in Table No. 1.

**Table No.1. Components of Monitoring Quality Assurance Project Plan**

SECTION NUMBER	SECTION NAME	SECTION DESCRIPTION
1.0	PROJECT MANAGEMENT	This section explains the overall project management.
1.1	TITLE PAGE AND APPROVAL	Description of Project Title, organizations, and responsible staff.
1.2	TABLE OF CONTENTS	Table of Contents list the sections and sub-sections included in the QAPP.
1.3	CONTRACT INFORMATION	List the contact staff, organization, and phone numbers.
1.4	PROJECT ORGANIZATION AND RESPONSIBILITY	Identify the project organization and the responsible entities who will ensure the QAPP procedures will be followed.
1.5	PROJECT OBJECTIVES AND APPROACH	Describe the objective based on the goal defined in the Conditional Waiver. Describe the approaches to meet the objectives.
1.5.1	<i>Measurement</i>	Describe the constituents that will be monitored.
1.5.2	<i>Project Schedule</i>	Identify when field studies will take place, the frequency of sampling, and when the field studies end.
1.6	QUALITY OBJECTIVES AND CRITERIA FOR DATA MEASUREMENT	Describe the quality objectives and criteria for data measurement. Refer to Quality Control Requirements listed in this document.
1.7	TRAINING AND CERTIFICATION	Describe the procedures for training field and laboratory staff.
1.8	DOCUMENTATION AND RECORDS	Describe the documentation procedure and record keeping for the monitoring program.
1.8.1	<i>Data to be Included in Reports</i>	List the laboratory and field data that will be included in the report.
1.8.2	<i>Reporting Format</i>	Explain what type of data will be included in the final report. Describe how the data that didn't meet the quality objectives will be qualified (e.g., estimated, usable, unusable).
2.0	DATA ACQUISITION	This section describes the sampling design and sample collection criteria
2.1	SAMPLING DESIGN	Describe the sampling design.
2.2	RATIONALE FOR THE DESIGN	Describe the purpose of the study. State if the design is based on a statistical or judgmental data collection method.
2.2.1	<i>Procedure for locating and Selecting Environmental Samples</i>	Describe procedures for locating and selecting the monitoring site/location(s).
2.2.2	<i>Classification of Measurements as Critical</i>	All measurements shall be classified as critical. Describe the process that will ensure that data will undergo closer scrutiny during data review.
2.2.3	<i>Validation of any Nonstandard methods</i>	List the non-standard methods that will be used and describe the procedures to validate the method.
3.0	FIELD PROCEDURES	Describe the field procedures for the elements listed below. Refer to the Field Procedures (Section 3.0) to meet the requirements for this monitoring program.
3.1	SAMPLE COLLECTION METHODS	See Section 3.0 for criteria. Describe the project specific methods.
3.1.1	<i>Sample Storage, Preservation and Holding Times</i>	See Section 3.0 for criteria. Describe the project specific procedures.
3.1.2	<i>Sample Identification Scheme</i>	See Section 3.0 for criteria. Describe the project specific procedures.
3.1.3	<i>Field Measurements</i>	See Section 3.0 for criteria. Describe the project specific methods of field measurement.
3.1.4	<i>QC Sample Collection</i>	See Section 3.0 for criteria. Describe the project specific quality control samples.
3.1.5	<i>Field Instrument Calibration</i>	See Section 3.0 for criteria. Describe the project specific methods of calibration.
3.1.6	<i>Decontamination Procedures</i>	See Section 3.0 for criteria. Describe the project specific documentation procedure.
3.1.7	<i>Field Documentation</i>	See Section 3.0 for criteria. Describe the project specific field documentation procedure.
3.2	SAMPLE CUSTODY AND DOCUMENTATION	This section describes the sample custody and documentation procedures.
3.2.1	<i>Documentation Procedures</i>	Describe the field documentation procedures.
3.2.2	<i>Chain-of-Custody Procedures and Form</i>	See Section 3.0 for criteria. Describe the Chain of Custody procedures.
3.2.3	<i>Sample Shipments and Handling</i>	See Section 3.0 for criteria. Describe the sample shipment procedure. How the samples will be delivered from the field to the laboratory.
3.2.4	<i>Laboratory Custody Procedures</i>	See Section 3.0 for criteria. Describe the project laboratory custody procedures.
4.0	ANALYTICAL METHOD REQUIREMENTS	This section describes the analytical method requirements.
4.1	CHEMISTRY ANALYSIS	Describe the chemistry analyses procedure, reference the published method, and identify the quantitation procedures.
4.2	TOXICITY TESTING	Describe the toxicity testing method and procedure, species, and reference the published methods being followed.
4.3	DETECTION AND QUANTITATION LIMITS	Describe the detection and quantitation limits for all constituents. See

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SECTION NUMBER	SECTION NAME	SECTION DESCRIPTION
		Section 4.0 for requirements.
4.4	LABORATORY STANDARD AND REAGENTS	Describe the reagents used in the laboratory and how they are checked for the quality.
4.5	SAMPLE PREPARATION PROCEDURES	Describe the sample preparation procedure and the reference method for each analytical method used and every constituent being monitored
5.0	QUALITY CONTROL REQUIREMENTS	This section describes the laboratory and field quality control. Laboratory and field sampling SOP should be provided to include the detail information.
5.1	DATA QUALITY OBJECTIVES AND QUALITY ASSURANCE OBJECTIVES	Describe the precision, accuracy, comparability, and completeness criteria for this project. See Section 5.0 for required information.
5.2	DEVELOPMENT OF PRECISION AND ACCURACY	Provide information on how the precision and accuracy will be developed for this project. See Section 5.0 for required information.
5.3	INTERNAL QUALITY CONTROL SAMPLES	Describe and list the internal QC samples, the frequency and acceptance criteria.
5.4	FIELD QUALITY CONTROL SAMPLES	Describe and list the type of field QC samples, the frequency of collection, and the acceptance criteria.
5.5	LABORATORY QUALITY CONTROL SAMPLES	Describe the laboratory QC samples and the frequency of analyses.
6.0	INSTRUMENTATION AND EQUIPMENT PREVENTATIVE MAINTENANCE	This section describes the instrumentation and preventive maintenance.
6.1	SAMPLE EQUIPMENT CLEANING PROCEDURES	Describe the sampling equipment cleaning procedures.
6.2	ANALYTICAL INSTRUMENT AND EQUIPMENT TESTING PROCEDURES AND CORRECTIVE ACTIONS	List the analytical instrument, manufacturer, maintenance procedure, and corrective actions when instruments are not operating within the required operating limits.
6.3	INSTRUMENT CALIBRATION AND FREQUENCY	This section describes the instrument calibration procedures and frequency of calibration
6.3.1	<i>Analytical Procedures and Calibration</i>	Describe the calibration procedure and frequency for each analytical method used in this monitoring program. Refer to Section 6.0 to follow the required procedure.
7.0	DATA MANAGEMENT	Describe the data management procedure. Where the original data will be kept, who receive the copy of the data, and who is responsible for maintaining the database.
7.1	DATA ASSESSMENT PROCEDURES	How the data will be assessed and what tools will be used to assess the data.
7.1.1	<i>Training and Certification</i>	Describe the training requirements for the field and laboratory staff.
7.1.2	<i>Data to be included in the Report</i>	Specify the data that will be included in the monitoring report. See Section 7.0 for requirements
8.0	DATA VALIDATION AND USABILITY	This section describes the data validation and usability.
8.1	LABORATORY DATA REVIEW, VERIFICATION AND REPORTING	Describe the laboratory procedure for data review and validation prior to release of the data.
8.2	DATA SYSTEM AUDITs	Describe any audit that the system may undergo during the monitoring.
8.2.1	<i>Technical System Audit</i>	Describe the frequency and procedure for the technical system audit.
8.2.2	<i>Performance Evaluations Audit</i>	Describe the procedure for performing a PE sample.
8.2.3	<i>Field Technical Audits</i>	Identify the entity who will be conducting the field technical audit and describe the procedure for conducting the audit.
9.0	REFERENCES	List all the references used to prepare the QAPP.
	ATTACHMENTS	List and enclose the attachments required. (e.g., Laboratory Quality Assurance Manual and SOPs).

In order to provide some technical information in preparing the QAPP, Sections 3.0 through 8.2.3 of the QAPP listed in Table No.1 are discussed in more detail below.

These sections focus primarily on the quality assurance and quality control components of the field and laboratory procedures. The section numbers provided below correspond to the Table No. 1 section numbers and section titles for ease of use.

## SECTION 3.0 FIELD PROCEDURES

Surface water and sediment samples will be collected for chemical analyses and biological toxicity testing. While the primary focus will be the collection of samples for pesticide analyses, other constituents will be required as listed in the *Watershed Monitoring and Reporting Program*.

### Section 3.1 Sample Collection Methods

Proper sampling techniques must be used to ensure that a sample is representative of the flow in the cross section. Samples should be collected using a standard multi-vertical depth integrating method to obtain the most representative isokinetic sample possible. By using this method the water entering the sampler is hydrodynamically equivalent to the portion of the stream being sampled. Abbreviated sampling methods (i.e., weighted-bottle or dip sample) can also be used for collecting a representative sample of the stream chemistry.

#### Section 3.1.1 Sample Storage, Preservation and Holding Times

Sample containers must be pre-cleaned and certified to be free of contamination according to the United States Environmental Protection Agency (U.S. EPA) specification for the appropriate methods.

#### Section 3.1.2 Sample Identification Scheme

All samples must be identified with a unique number to ensure that results are properly reported and interpreted. Samples must be identified such that the site, sampling location, matrix, sampling equipment and sample type (i.e., normal field sample or QC sample) can be distinguished by a data reviewer or user.

#### Section 3.1.3 Field Measurements

For all water bodies sampled, water quality parameters including pH, specific conductance, dissolved oxygen, and temperature must be measured prior to collecting samples for laboratory analyses.

#### Section 3.1.4 QC Sample Collection

Equipment blanks, field duplicates, and matrix spikes must be collected at a frequency of about 1 per 20 normal samples. Matrix spikes will be collected as, normal samples and will be spiked at the laboratory prior to sample preparation.

#### Section 3.1.5 Field Instrument Calibration

Routine field instrument calibration must be performed at least once per day prior to instrument use to ensure instruments are operating properly and producing accurate and reliable data. Calibration should be performed at a frequency recommended by the manufacturer.

#### Section 3.1.6 Decontamination Procedures

All field and sampling equipment that will contact samples must be decontaminated after each use in a designated area.

#### Section 3.1.7 Field Documentation

All field activities must be adequately and consistently documented to ensure defensibility of any data used for decision-making and to support data interpretation. Pertinent field information, including (as applicable), the width, depth, flow rate of the stream, the surface water condition, and location of the tributaries must be recorded on the field sheets.

#### Section 3.2 Sample Custody and Documentation

Sample custody must be traceable from the time of sample collection until results are reported. Sample custody procedures provide a mechanism for documenting information related to sample collection and handling.

##### Section 3.2.1 Documentation Procedures

A field activity coordinator must be responsible for ensuring that the field sampling team adheres to proper custody and documentation procedures. A master sample logbook or field datasheets shall be maintained for all samples collected during each sampling event.

##### Section 3.2.2 Chain-of-Custody Form

A chain-of-custody (COC) form must be completed after sample collection and prior to sample shipment or release. The COC form, sample labels, and field documentation must be crossed checked to verify sample identification, type of analyses, number of containers, sample volume, preservatives and type of containers.

##### Section 3.2.3 Sample Shipments and Handling

All sample shipments are accompanied with the COC form, which identifies the contents. The original COC form accompanies the shipment and a copy is retained in the project file.

All shipping containers must be secured with COC seals for transportation to the laboratory. The samples must be placed with ice to maintain the temperature between 2-4 degrees C. The ice packed with samples must be sealed in zip lock bags and contact each sample and be approximately 2 inches deep at the top and bottom of the cooler. Samples must be shipped to the contract laboratories according to Department of Transportation standard.

##### Section 3.2.4 Laboratory Custody Procedures

The following sample control activities must be conducted at the laboratory:

- Initial sample login and verification of samples received with the COC form;
- Document any discrepancies noted during login on the COC;
- Initiate internal laboratory custody procedure;
- Verify sample preservation (e.g., temperature);
- Notify the project coordinator if any problems or discrepancies are identified; and
- Proper samples storage, including daily refrigerator temperature monitoring and sample security.

## SECTION 4.0 ANALYTICAL REQUIREMENTS

### Section 4.1 Chemistry Analyses

Pesticide analyses must be conducted on unfiltered (whole) fractions of the samples. Prior to the analysis of any environmental samples, the laboratory must have demonstrated the ability to meet the minimum performance requirements for each analytical method. Initial demonstration of laboratory capabilities includes the ability to meet the project specified quantitation limits (QL), the ability to generate acceptable precision and recoveries, and other analytical and quality control parameters as stated in this Guide. Analytical methods used for chemistry analyses must follow a published method and document the procedure for sample analyses in a laboratory standard operation procedure (SOP) for review and approval.

### Section 4.2 Toxicity Testing

The ambient water toxicity test results must provide a reliable qualitative prediction of impacts to in stream biota. At a minimum the toxicity testing will need to include the 4-day static renewal procedures described in Method for Measuring Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (US EPA, 2002).

### Section 4.3 Detection and Quantitation Limits

#### Method Detection Limit Studies

Each laboratory performing analyses under this program must routinely conduct method detection limit (MDL) studies to document that the MDLs are less than the project-specified QLs. If any analytes have MDLs that do not meet the project QLs, the following steps must be taken:

1. Perform a new MDL study using concentrations sufficient to prove analyte quantitation at concentrations less than the project-specified QLs per the procedure for the Determination of the Method Detection Limit presented in Revision 1.1," 40 Code of Federal Regulations (CFR) 136, 1984.
2. No samples may be analyzed until the issue has been resolved. MDL study results must be available for review during audits, data review, or as requested. Current MDL study results must be reported at the beginning of every project for review and inclusion in project files.

An MDL is developed from seven aliquots of a standard containing all analytes of interest spiked at five times the expected MDL, which are taken through the analytical method sample processing steps.

The data are then evaluated and used to calculate the MDL. If the calculated MDL is less than three times below the spiked concentration, another MDL study must be performed using a lower concentration

### Project Quantitation Limits

Laboratories generally establish QLs that are reported with the analytical results; these may be called reporting limits, detection limits, reporting detection limits, or other terms. These laboratory limits must be less than or equal to the project QLs. Project QLs must be lower than the proposed or existing numeric water quality objectives by the Regional Board. The laboratories must have documentation to support quantitation at the required levels.

Laboratories must report analytical results between the MDL and QL. These results must be reported as numerical values and qualified as estimates. Reporting as "trace" or "<QL" is not acceptable.

Sample results less than MDLs will be reported only for GC/MS analyses if the mass spectral fingerprint can prove positive identification; these results must be qualified as estimated values by the laboratory.

### Section 4.4 Laboratory Standards and Reagents

All stock standards and reagents used for extraction and standard solutions must be tracked through the laboratory. The preparation and use of all working standards must be recorded in bound laboratory notebooks that document standard tractability to U.S. EPA, A2LA or National Institute for Standards and Technology (NIST) criteria. Records must have sufficient detail to allow determination of the identity, concentration, and viability of the standards including any dilutions performed to obtain the working standard. Date of preparation, analyte or mixture, concentration, name of preparer, lot or cylinder number, and expiration date, if applicable, must be recorded on each working standard.

### Section 4.5 Sample Preparation Methods

Surface water and sediments samples will be prepared in solvent or via other extraction techniques prior to sample analyses. All procedures must follow a published method. The sample preparation procedure must be documented and included in the monitoring plan for review and approval.

## SECTION 5.0 QUALITY CONTROL REQUIREMENTS

The types of quality control assessments required in the monitoring program are discussed below. Detailed procedures for preparation and analysis of quality control samples must be provided in the analytical method documents or Standard Operating Procedures (SOP) by the analytical laboratories for approval.

### Section 5.1 Quality Assurance Objectives (QAOs)

Quality assurance objectives are the detailed QC specifications for precision, accuracy, representativeness, comparability, and completeness (PARC). The QAOs are then used as comparison

criteria during data quality review by the group that is responsible for collecting data to determine if the minimum requirements have been met and the data may be used as planned.

#### Section 5.2 Development of Precision and Accuracy Objectives

Laboratory control spikes (LCSs) are used to determine the precision and accuracy objectives. The laboratory fortifies the LCSs with target compounds to monitor the laboratory precision and accuracy. Field duplicates measure sampling precision and variability for comparison of project data. Acceptable relative percent difference (RPD) is less than 25 for field duplicate analyses. If field duplicate sample results vary beyond these objectives, the results are qualified.

#### Section 5.3 Internal Quality Control (QC)

Internal quality control (QC) is achieved by collecting and/or analyzing a series of duplicate, blank, spike, and spike duplicate samples to ensure that analytical results are within the specified QC objectives. The QC sample results are used to quantify precision and accuracy and identify any problem or limitation in the associated sample results. The internal QC components of a sampling and analyses program will ensure that the data of known quality are produced and documented. The internal QC samples, frequency, acceptance criteria, and corrective action must meet the minimum requirements presented in the following sections.

#### Section 5.4 Field Quality Control

Field QC samples are used to assess the influence of sampling procedures and equipment used in sampling. They are also used to characterize matrix heterogeneity.

For basic water quality analyses, quality control samples to be prepared in the field will consist of equipment blanks, field duplicates, and matrix spikes (when applicable). The number of field duplicates and field blanks are set to achieve an overall rate of at least 5% of all analyses for a particular parameter. The external QA samples are rotated among sites and events to achieve the overall rate of 5% field duplicate samples and 5% equipment blanks (as appropriate for specific analyses).

##### Equipment Blanks

Equipment blanks will be collected and analyzed for all analytes of interest along with the associated environmental samples. Equipment blanks will consist of laboratory-prepared blank water (certified contaminate free) processed through the sampling equipment using the same procedures used for environmental samples.

##### Field Duplicates

Field duplicates will be collected at the rate of one per sampling event, and analyzed along with the associated environmental samples. Field duplicates will be collected at the same time as environmental samples or of two grab samples collected in rapid succession. If the relative percent difference (RPD) of field duplicate results is greater than 25% and the absolute difference is greater than the RL, both samples should be reanalyzed.

### Matrix Spikes and Matrix Spike Duplicates

Matrix spikes and matrix spike duplicates will be analyzed at the rate of one pair per sample batch. Matrix spike samples are collected at the same time as the environmental samples and are spiked at the laboratory. Laboratory acceptance criteria should be submitted to the Regional Board staff for review and approval as part of the development and approval of the Scope of Work for monitoring.

### Section 5.5 Laboratory Quality Control

For basic water quality analyses, quality control samples prepared in the contract laboratory will typically consist of method blanks, laboratory control samples, laboratory duplicates, and surrogate added to each sample (organic analysis).

#### Method Blanks

Method blanks will be prepared and analyzed by the contract laboratory with each batch of samples. If any analyte is detected in the blank, the blank and the associated samples must be re-extracted and re-analyzed.

#### Laboratory Control Samples and Surrogate

Laboratory control samples (LCS) will be analyzed at the rate of one per sample batch. Surrogate may be added to samples for organic analyses. Laboratory acceptance criteria must be submitted to Regional Board staff for review and approval as part of the development and approval of the monitoring plan.

## SECTION 6.0 INSTRUMENTATION AND EQUIPMENT PREVENTIVE MAINTENANCE

### Section 6.1 Sample Equipment Cleaning Procedures

Equipment used for sample collection must be cleaned according to the specific procedures documented in each sampling SOP. Sampling SOP will be prepared by the group responsible for sampling and will be submitted to Regional Board for review and approval as part of the monitoring plan.

### Section 6.2 Analytical Instrument and Equipment Testing Procedures and Corrective Actions

Testing, inspection, maintenance of analytical equipment used by the contract laboratory, and corrective actions shall be documented in the quality assurance manuals for each analyzing laboratory. Laboratory Quality Assurance Manual must be submitted to Regional Board for review and approval prior to start of sampling and analyses.

### Section 6.3 Instrument Calibrations and Frequency

#### Section 6.3.1 Analytical Procedures and Calibration

This section briefly describes analytical methods and calibration procedures for samples that will be collected under this monitoring program.

Analytical methods that will be used in this program will need to follow the general guidance of any of the following methods:

- *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA-600/4-85/054)
- *U.S. EPA Methods for Chemical Analysis of Water and Wastes* (EPA-600/4-79-020, third edition, 1983)
- *Methods for Determination of Organic Compounds in Drinking Water* (EPA-600/4-88/039)
- *Standard Methods for the Examination of Water and Wastewater*
- *USEPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. Office of Water, Washington, D.C. EPA-821-R-02-012*
- *USEPA. 2002. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition. Office of Water, Washington, D.C. EPA-821-R-02-013.*
- *USEPA. 1994. Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates. Office of Research and Development, Washington, D.C. EPA-600-R-94-024.*

For this program, only linear calibration with either an average response factor or a linear regression is acceptable for organic analyses. Non-linear calibration is not allowed since using this calibration option creates a potential for poor quantitation or biased concentrations of compounds at low or high concentrations (near the high and low ends of the calibration range).

Laboratories shall prepare an initial 5-point calibration curve, where the low level standard concentrations is less than or equal to the analyte quantitation limits

## SECTION 7.0 DATA MANAGEMENT

Copies of field logs, a copy of COC forms, original preliminary and final lab reports, and electronic media reports must be kept for review by the Regional Board Staff. The field crew must retain original field logs. The contract laboratory shall retain original COC forms. The contract laboratory will retain copies of the preliminary and final data reports.

Concentrations of chemicals and toxicity endpoints, and all numerical biological parameters shall be calculated as described in the referenced method document for each analyte or parameter, or laboratory operating procedures. The data generated shall be converted to a standard database format maintained by the responsible party and available for the Regional Board staff review. After data entry or data transfer procedures are completed for each sample event, data should be inspected for data transcription errors, and corrected as appropriate. After the final QA checks for errors are completed, the data should be added to the final database.

### Section 7.1 Data Assessment Procedures

Data must be consistently assessed and documented to determine whether project quality assurance objectives (QAOs) have been met, quantitatively assess data quality and identify potential limitations on data use. Assessment and compliance with quality control procedures will be undertaken during data collection phase of the project.

#### Section 7.1.1 Training and Certification

All staff performing field or laboratory procedures shall receive training to ensure that the work is conducted correctly and safely. At a minimum, all staff shall be familiar with the field guidelines and procedures and the laboratory SOP included in the project QAPP. All work shall be performed under the supervision of experienced staff, field managers, laboratory managers or other qualified individuals. A copy of the staffs' training records must be maintained in each specific project file.

#### Section 7.1.2 Data to be Included in Data Reports

For each sampling event, the field team or monitoring agency shall provide the Project Lead Staff with copies of the field data sheets (relevant pages of field logs) and copies of the COC forms for all samples submitted for analysis. At minimum, the following sample-specific information must be provided for each sampling program to the Regional Board staff:

- Sample Identification
- Monitoring location
- Sample type, e.g. grab or composite type (Cross-sectional, flow-proportional, etc.)
- QC sample type and frequency
- Date and time(s) of sample collection

- Requested analyses (specific parameters or method references)
- Results of samples collected and all laboratory QC samples (calibrations, blanks, surrogates, laboratory spikes, matrix spikes, reference materials, etc.) and the identification of each analytical sample batch.

### Section 7.1.3 Reporting Format

All results meeting data quality objectives and results having satisfactory explanations for deviations from objectives shall be reported on the Laboratory Final Report. The final results shall include the results of all field and laboratory quality control samples.

## SECTION 8.0 DATA VALIDATION AND USABILITY

### Section 8.1 Laboratory Data Review, Verification, and Reporting

The laboratory quality assurance manual must be used to accept, reject or qualify the data generated by the laboratory. The laboratory management will be responsible for validating the data generated by the laboratory.

The laboratory personnel must verify that the measurement process was “in control” (i.e., all specified data quality objectives were met or acceptable deviations explained) for each batch of samples before proceeding with analysis of a subsequent batch. In addition, each laboratory will establish a system for detecting and reducing transcription and/or calculation errors prior to reporting data.

Only data, which have met data quality objectives, or data, which have acceptable deviations explained will be submitted by the laboratory. When QA requirements have not been met, the samples will be reanalyzed when possible and only the results of the reanalysis will be submitted, provided they are acceptable.

### Section 8.2 Data System Audits

The Regional Board staff may audit laboratories during conducting sample analyses for this program.

#### Section 8.2.1 Technical System Audit:

A technical system audit is a quantitative review of a sampling or analytical system. Qualified technical staff members perform audits.

The laboratory system audit results are used to review operations and ensure that the technical and documentation procedures provide valid and defensible data.

### Section 8.2.2 Performance Evaluation Audits

Performance evaluation audits quantitatively assess the data produced by a measurement system. Performing an evaluation audit involves submitting certified samples for each analytical method. The matrix standards are selected to reflect the concentration range expected for the sampling program. Any problem associated with PE samples must be evaluated to determine the influence on field samples analyzed during the same time period. The laboratory must provide a written response to any PE sample result deficiencies.

### Section 8.2.3 Field Technical Audits

The contractor should routinely observe field operations to ensure consistency and compliance with sampling specifications presented in this document and Quality Assurance Project Plans that will be developed later. An audit checklist should document field observations and activities.

## 9.0 REFERENCES

U.S. EPA 2001. Laboratory Documentation Requirements for Data Evaluation (R9QA/004.1)

U.S. EPA. 1983. Methods for Chemical Analysis of Water and Wastes. EPA-600/4-79-020, third edition

U.S. EPA. 1988. Methods for Determination of Organic Compounds in Drinking Water (EPA-600/4-88/039)

USEPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. Office of Water, Washington, D.C.  
EPA-821-R-02-012

USEPA. 2002. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition. Office of Water, Washington, D.C.  
EPA-821-R-02-01

USEPA. 1994. Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates. Office of Research and Development, Washington, D.C.  
EPA-600-R-94-024.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM  
ORDER NO. R5-2003-  
FOR  
INDIVIDUAL DISCHARGERS  
UNDER  
CONDITIONAL WAIVER OF  
WASTE DISCHARGE REQUIREMENTS  
FOR  
DISCHARGES FROM IRRIGATED LANDS

As conditioned by the *Conditional Waiver of Waste Discharge Requirements for Discharges from Irrigated Lands Conditional Waiver, Resolution No. R5-2003- (Waiver)*, Individual Dischargers shall develop and implement a Monitoring and Reporting Program Plan (MRP Plan) to assess the impacts of waste in discharges from irrigated lands, and where necessary, to track progress of existing or new management practices implemented to improve the impact of these discharges on water quality and/or to protect waters of the state and its beneficial uses.

The Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Board) adopts this MRP pursuant to Water Code Section 13267. The reports required by this Order are required to evaluate impacts of discharges of waste to waters of the state and to determine compliance with the terms and conditions of the Waiver. The Regional Board Executive Officer may revise the MRP as appropriate. Dischargers shall comply with the MRP as revised by the Executive Officer.

The purpose of this Monitoring and Reporting Program (MRP) is to describe the conditions or requirements that must be addressed in an acceptable Individual MRP Plan. The purpose of the MRP Plan shall be to monitor the discharge of waste in irrigation return flows and stormwater from irrigated lands that are enrolled under the Waiver for individual Dischargers. Dischargers shall prepare and submit to the Regional Board for review and approval by the Executive Officer an MRP Plan that meets the minimum conditions of the MRP and includes site(s) to be monitored, frequency of monitoring, parameters to be monitored, and documentation of monitoring protocols. The Executive Officer will review the MRP Plan to determine if it meets or exceeds the minimum requirements of this Order. The submittal of a MRP Plan is a condition of the Waiver.

The development of a science-based water quality monitoring program is critical for determining actual and potential impacts of discharges of waste from irrigated lands on beneficial uses of surface water (waters of the state) in the Central Valley Region. Determining the existing ecological conditions of agricultural dominated water bodies in the Central Valley Region is a critical goal of a water quality monitoring program and should be achieved by multiple assessment tools such as toxicity, chemical monitoring and bioassessments as necessary.<sup>1</sup> The MRP Plan is a part of the Regional Board

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<sup>1</sup> Letter to Art Baggett and Thomas Pinkos from Don Gordon, Agricultural Council of California, August 5, 2002.

Irrigated Lands Conditional Waiver program to assess the impact on these discharges on surface waters.

## **I. MONITORING AND REPORTING PROGRAM REQUIREMENTS**

The MRP Plan shall be designed to achieve the following objectives as a condition of the Waiver:

- a. Assess the impacts of waste discharges from irrigated lands to surface water;
- b. Determine the degree of implementation of management practices to reduce discharge of specific wastes that impact water quality;
- c. Determine the effectiveness of management practices and strategies to reduce discharges of wastes that impact water quality;
- d. Determine concentration and load of waste in these discharges to surface waters; and
- e. Evaluate compliance with existing narrative and numeric water quality objectives to determine if additional implementation of management practices are necessary to improve and/or protect water quality.

### **1. Types of Monitoring and Evaluation**

To achieve the objectives of the MRP, at a minimum, the Discharger shall discuss in the MRP Plan farm specific monitoring and evaluation program, which includes the following:

- a. Water Quality (constituents listed in Table 1) and Flow Monitoring;
- b. Toxicity Testing, as necessary;
- c. Pesticide Use Evaluation; and
- d. Evaluation of the effectiveness of management practices.

- **Water Quality and Flow Monitoring**

Monitoring used to assess the wastes and loads in discharges from irrigated lands to surface waters, and to evaluate performance of management practice implementation efforts. See Table 1 for the list of constituents.

- **Toxicity Testing**

Toxicity Monitoring may be required based on the use of chemicals on the farm. The purpose of the toxicity testing is to evaluate water quality, primarily through the use of aquatic species toxicity testing, to evaluate compliances with narrative toxicity objectives, to identify the causes (e.g., sediment, contaminants, salt, etc.) of toxicity observed, and to determine the sources of toxicants identified.

Toxicity testing shall be performed when the chemistry (Water Quality) analyses

results of the chemical used on the farm exceed the LC50 to determine the cause of toxicity. These toxicity testing will also be used to determine if the management program is achieving the goals and objectives identified during planning, including whether the waterbody is maintaining the conditions that are improving and/or protective of beneficial uses. Acute toxicity testing shall be conducted using the invertebrate, *Ceriodaphnia dubia*, and the larval fathead minnow, *Pimephales promelas*, according to standard USEPA acute toxicity test methods<sup>2</sup>. In addition, to identify toxicity caused by herbicides, 96-hr toxicity tests with the green algae, *Selenastrum capricornutum*, shall be conducted<sup>3</sup>. The water column toxicity testing will be used as an indicator for constituents of concern that are water-soluble. Sediment toxicity testing using the invertebrate species *Hyalella azteca* or *Chironomus tentans* according to USEPA methods<sup>4</sup> shall be conducted for hydrophobic (sediment bound) compounds that are present in the waterbody.

For this initial screening, 100% (undiluted) sample shall be tested. If 100% test organism mortality is detected within 24 hours during the initial screening toxicity test, then a multiple dilution test including a minimum of five sample dilutions shall be conducted to determine the magnitude of the toxic response.

Further, if toxicity is detected during the initial screening test, then Toxicity Identification Evaluation<sup>5</sup> (TIE) and chemical monitoring shall be conducted to determine the cause of toxicity. At a minimum, a Phase I TIE<sup>6</sup> should be conducted to determine the general class (i.e., metals, non-polar organics such as pesticides, surfactants, etc.) of chemical causing toxicity. This minimum TIE effort will determine the type of chemical monitoring necessary to identify the specific agents causing toxicity. Phase II<sup>7</sup> TIEs may also be utilized to identify specific toxic agents.

In addition to TIEs, sites identified, as toxic in the initial screen shall be re-sampled to estimate the duration of the toxicant in the waterbody. Additional samples collected upstream of the original site should also be collected to determine the potential source(s) of the toxicant.

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<sup>2</sup> USEPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. Office of Water, Washington, D.C. EPA-821-R-02-012.

<sup>3</sup> USEPA. 2002. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition. Office of Water, Washington, D.C. EPA-821-R-02-013.

<sup>4</sup> USEPA. 1994. Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates. Office of Research and Development, Washington, D.C. EPA-600-R-94-024.

<sup>5</sup> A TIE is a set of sample manipulation procedures designed to identify the specific causative agent(s) responsible for the observed toxicity.

<sup>6</sup> USEPA. 1998. Methods for Aquatic Toxicity Identification Evaluations. Phase I Toxicity Characterization Procedures. Office of Research and Development, Duluth, MN. EPA-600-3-88-034.

<sup>7</sup> USEPA. 1998. Methods for Aquatic Toxicity Identification Evaluations. Phase II Toxicity Identification Procedures. Office of Research and Development, Duluth, MN. EPA-600-3-88-035.

Information must be collected from Dischargers on the type of management practices that are being used, the degree to which they are being implemented within the farm, and how effective they are in protecting waters of the state.

- **Pesticide Use Evaluation**

The MRP Plan shall identify all pesticides use on the Farm and propose an evaluation of which pesticides should be monitored during the term of the Waiver. The MRP Plan Pesticide Use Evaluation shall address the timing of pesticide applications, the application rates, the amounts of pesticide applied, and the points of application (all of these factors can be referred to as "use pattern"). The MRP Plan can use pesticide use reports submitted by the applicators to the County Agricultural Commissioners and Department of Pesticide Regulations (DPR) as part of the Pesticide Use Evaluation.

- **Management Practice Effectiveness and Implementation Tracking**

Information must be collected on the type of management practices that are being used, and how effective they are in protecting surface waters. Data should be collected in four broad areas; 1) pesticide mixing and loading, and application practices, 2) pest management practices, 3) management practices to address other wastes (salt, sediment, nitrogen, etc.), and 4) cultural practices. This information should be used to compare the effectiveness of management practices in reducing loading of one or more wastes that have been identified to impact surface waters.

## 2. Minimum Requirements

The following table lists the parameters <sup>a</sup> to be monitored by the individual Discharger.

**Table 1. Constituents to be monitored**

Constituent	Quantitation Limit	Reporting Unit	Sampling Frequency	Required Parameter
Flow	N/A	CFS (Ft <sup>3</sup> /Sec)	Storm/In season	Yes (see below)
pH	N/A	pH	Storm/In season	Yes
Electrical Conductivity	N/A	µmhos/cm	Storm/In season	Yes
Dissolved Oxygen	N/A	mg O <sub>2</sub> /L	Storm/In season	Yes
Temperature	N/A	Degrees Celsius	Storm/In season	Yes
Turbidity	N/A	NTUs	Storm/In season	Yes
Total Dissolve Solids	N/A	mg/L	Storm/In season	Yes
Total Organic Carbon	N/A	mg/L	Storm/In season	Yes

MONITORING AND REPORTING PROGRAM  
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WAIVER OF WASTE DISCHARGE REQUIREMENTS  
FOR DISCHARGES FROM IRRIGATED LANDS

- 5 -

Constituent	Quantitation Limit	Reporting Unit	Sampling Frequency	Required Parameter
Total Kjeldahl Nitrogen	a	mg/L	Storm/In season	Yes
Phosphorus	a	ug/L	Storm/In season	Yes
Potassium	a	ug/L	Storm/In season	Yes
<b>Pesticides</b>				
Carbamates	a	ug/L	Storm/In season	If used
Organophosphorus	a	ug/L	Storm/In season	If used
Pyrethroids	a	ug/L	Storm/In season	If used
Herbicides	a	ug/L	Storm/In season	If used
<b>Metals</b>				
Cadmium	a	ug/L	Storm/In season	If used
Copper	a	ug/L	Storm/In season	If used
Lead	a	ug/L	Storm/In season	If used
Nickel	a	ug/L	Storm/In season	If used
Zinc	a	ug/L	Storm/In season	If used

a Only parameters used on the farm should be analyzed unless otherwise noted. Use may be indirect as inert ingredient in farm chemicals. The required detection limits are available from the Regional Board upon written request.

Monitored include chemicals that are added to agricultural lands (e.g., pesticides, herbicides) to enhance crop production, constituents that are formed as a result of agricultural land use practices such as total dissolved solids (TDS), total organic carbon (TOC), and other constituents that may be leached from the land. The MRP Plan must include a sufficient number of monitoring sites and surface water flow monitoring for each location to allow calculation of the load discharged for waste parameter monitored.

Method detection limits and practical quantitation limits shall be reported. All peaks detected on chromatograms shall be reported, including those, which cannot be, quantified and/or specifically identified. The Discharger shall use US EPA approved methods, provided the method can achieve method detection limits equal to or lower than analytical methods quantitation limits specified in this Order.

At a minimum, the MRP Plan must include (1) all chemicals used on the farm; (2) sufficient monitoring sites based on acreage, flow monitoring, and frequency of sample collection to allow for calculation of load discharged for waste parameters monitored; and (3) measurements of water quality parameters such as temperature, electrical conductivity, pH, and dissolved oxygen. Proper sampling techniques must be used to ensure a sample is representative of the flow in the cross section.

### **Discharger Specific Requirements**

The Discharger specific studies are needed to characterize the beneficial use impairments of the receiving water bodies due to agricultural runoff. For each group of pesticides listed in Table 1, the MRP Plan shall include all of the individual pesticides if they are used by the Discharger. **The MRP Plan does not need to include individual pesticides if they are not used by the Discharger.**

All pesticides monitored must be reported at a quantitation limit at least less than ten times the LC 50. These limits are available from the Regional Board upon written request. The quantitation limits reported by the laboratory must be supported by the detection limit study as described in the Quality Assurance Project Plan (QAPP), **Attachment A**, which is attached hereto and made part of this Order by reference.

All sampling methods shall have documented protocols. The MRP Plan must include all field and laboratory procedures as stated in the MRP and **Attachment A**.

### **3. Flow Monitoring**

Representative flow measurements shall be obtained at each sample location during each sampling event. Additionally, the presences or absences of flow at each sample site shall be noted on a daily basis during the irrigation season. The MRP Plan shall record the time, date, and location of each flow measurement or observation (absences) on field data sheets. Discharge flow monitoring shall be conducted and shall be reported in cubic feet per second (CFS).

### **4. Monitoring Seasons**

Monitoring required in Section 1 "Monitoring Types" shall be conducted during the irrigation season and storm season. In general, the irrigation season is March through August, but may start as early as February and extend to October. The storm season is December through February, but may include November and March. The MRP Plan shall describe the irrigation and storm seasons and propose a specific irrigation and storm season monitoring periods for the region and when peak irrigation and storm discharges are likely to occur.

### **5. Monitoring Schedule**

The MRP Plan shall be carried out using a systematic schedule. The MRP Plan should indicate the start date, identify time of the year, identify when field studies will take place, define the frequency of sampling, and indicate when the field studies end. Timing, duration, and frequency of sampling should be based on the complexity, hydrology, and size of the farm and its discharge points. The MRP

Plan must include a sufficient number of monitoring sites and surface water flow monitoring for each location to allow calculation of the load discharged for appropriate parameters to achieve the objective identified in Section

*I. MONITORING AND REPORTING PROGRAM REQUIREMENTS* above.

At a minimum, the above referenced monitoring types shall be conducted during and after one storm event, and quarterly sampling during the peak irrigation season to determine the concentration and loads of wastes discharges from the farm during the term of the Waiver. Toxicity testing maybe required to be conducted during storm and irrigation seasons. Toxicity testing shall also be performed when the chemistry (Water Quality) analyses results exceed the LC50 to determine the cause of toxicity.

## **6. Monitoring Sites**

The MRP plan shall describe the farm area as it relates to discharge points, sampling location(s), GPS coordinates, land use, the chemicals being used and the existing management practices. Sample location(s) should not include main-stem water bodies unless the water body is a Clean Water Act section 303(d) listed water body. The initial focus of the MRP Plan shall be on water bodies that carry agricultural drainage or are dominated by agricultural drainage. A map showing the monitoring sites shall be provided with the MRP Plan.

## **II. QUALITY ASSURANCE PROJECT PLAN (QAPP)**

To create a sound and consistent MRP Plan, it is important to develop monitoring protocols and a monitoring plan for the evaluation of water quality data. A QAPP must be developed by the Discharger or others to include quality assurance components of the monitoring program. State Wide Ambient Monitoring Program (SWAMP) QAPP is a comprehensive quality assurance plan that includes many of the elements required under this MRP. **Attachment A** presents the MRP QAPP Requirements and the outline for development of the monitoring QAPP. The QAPP includes the laboratory and field requirements to be used for data evaluation. Dischargers may use the SWAMP QAPP as an available resource and add the site-specific requirements and any other elements that are required under this MRP. A QAPP is required to be submitted with the Detailed Report for the MRP Plan to be complete. The Detailed Report is a condition of the Conditional Waiver.

## **III. REPORTING REQUIREMENTS**

Pursuant to California Water Code (CWC) Section 13267, the following Reports are required to be submitted to the Regional Board by the time schedule identified below.

**A. Farm Evaluation Report**

**Due: 1 April 2004**

The Discharger shall submit a Farm Evaluation Report to the Regional Board. The Farm Evaluation Report shall contain all of the information necessary to comply with the terms and conditions of the Waiver Order No. . The Farm Evaluation Report shall include:

1. Discharger name, address and phone number (owner and/or operator)
2. Map(s) of irrigated lands generating the discharge to surface waters. Maps shall include points of discharge (surface or subsurface discharges).
3. Crops commonly grown
4. Chemicals (pesticides, fertilizers, etc.) commonly applied in a manner that may result in the material coming in contact with irrigation water or storm water.
5. Management practices utilized for reducing or eliminating adverse discharges of constituents of concern.
6. Identification of water bodies receiving the discharge(s).
7. Description of any subsurface drainage collection system

**B. Monitoring and Reporting Program Plan**

**Due: 1 April 2004**

The Discharger shall develop and submit to the Regional Board a MRP Plan. The MRP Plan must include the components of the monitoring program as stated in this Order. At a minimum, the MRP Plan shall include the following elements:

1. Summary of the water quality historical data for the farm;
2. Monitoring site(s);
3. Land Use description;
4. Monitoring periods and start date of monitoring program;
5. Monitoring parameters, including minimum and site specific;
6. A QAPP consistent with the requirements described in **Attachment A**;
7. Documentation of monitoring protocols including sample collection methods and laboratory quality assurance manual;
8. Management Practice monitoring elements to determine effectiveness in meeting the conditions of the Waiver.

**C. Annual Monitoring Report**

**Due: Annual, 1 March**

The Annual Monitoring Report (AMR) shall be prepared after field monitoring events have been completed and includes a review of the monitoring program including the results of the data collected and data evaluation. The AMR shall include the following components:

MONITORING AND REPORTING PROGRAM  
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FOR DISCHARGES FROM IRRIGATED LANDS

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1. A title page;
2. Table of contents;
3. Description of the farm;
4. Monitoring objectives;
5. Sampling site descriptions;
6. Location map of sampling sites and land use;
7. Tabulated results of analyses;
8. Sampling and analytical methods used
9. Copy of chain of custodies;
10. Associated laboratory and field quality control samples results;
11. Summary of precision and accuracy;
12. Pesticide Use Report(s)
13. Data interpretation including assessment of data quality objectives;
14. Summary of management practices used on the farm;
15. Actions taken to address water quality impacts identified, including but not limited to, revised or additional management practices to be implemented;
16. Conclusions and recommendations.

Copies of all field documentation and laboratory original data must be included in the annual monitoring report as attachments. The AMR should also provide a perspective of the field conditions including a description of the weather, rainfall, temperature, stream flow, color of the water, odor, and other relevant information that can help in data interpretation.

In reporting monitoring data, the Discharger shall arrange the data in tabular form so that the required information is readily discernible. The data shall be summarized in such a manner to clearly illustrate compliance with the conditions of the Waiver.

A transmittal letter shall accompany each report. This letter shall include a discussion of any issues or data that indicates the discharge(s) is not in compliance with the terms and conditions of the Waiver found during the reporting period, and actions taken or planned for correcting water quality impairments, such as operational, field or facility modifications. The transmittal letter shall be signed and contain a penalty of perjury statement by the Discharger. This statement shall state:

*“I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.”*

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The Regional Board can request the Discharger to take additional actions if monitoring data indicates the water quality objectives are exceeded in surface waters.

The Discharger shall implement the above monitoring program as of the date of this Order.

Ordered by: \_\_\_\_\_  
THOMAS R. PINKOS, Executive Officer

\_\_\_\_\_  
(Date)

**Attachment A** – Conditional Waiver Of Waste Discharge Requirements For Discharges From Irrigated Lands Conditional Waiver No. R5-2003- , Individual Dischargers Monitoring And Reporting Program, Quality Assurance Project Plan

CONDITIONAL WAIVER OF  
WASTE DISCHARGE REQUIREMENTS  
FOR  
DISCHARGES FROM IRRIGATED LANDS  
CONDITIONAL WAIVER

DISCHARGER MONITORING AND REPORTING PROGRAM  
ORDER NO. R5-2003-

**QUALITY ASSURANCE PROJECT PLAN**

**1.0 INTRODUCTION**

A Quality Assurance Project Plan (QAPP) shall be developed by the Discharger and shall include site-specific information and field and laboratory quality assurance requirements. This document identifies the major elements of the quality assurance and quality control components that need to be described in the QAPP. The QAPP shall be submitted to the Regional Board for review and approval.

**2.0 OBJECTIVE**

The objective of this document is to identify the quality assurance components that should be included in the QAPP for the Discharger monitoring. A QAPP contains the requirements and criteria for the field and laboratory procedures used during planning and implementation of the monitoring program. These requirements and criteria shall be presented as a set of procedures to assure that the data collected during a monitoring program represents, as closely as possible, *in situ* conditions of the waterbody. This objective will be achieved by using accepted methodology (e.g., U.S. EPA) to collect and analyze water, sediment, and biota samples. The program's ability to meet this objective will be assessed by evaluating the laboratory results in terms of detection limits, precision, accuracy, comparability, representativeness, and completeness. This document provides a description of major elements of the field and laboratory quality assurance components.

**3.0 WHAT SHOULD BE INCLUDED IN THE QAPP**

A monitoring QAPP should include Project Management information e.g., project organization and responsibilities, project schedule, and the quality assurance components of the field and laboratory activities. The elements described in this document will provide the framework for developing a QAPP. These elements describe the field and laboratory elements of a QAPP and the requirements that are set forth by the Regional Board. QAPP for the Discharger monitoring must include all the required components as listed in Table No. 1.

**Table No.1. Components of Monitoring Quality Assurance Project Plan**

SECTION NUMBER	SECTION NAME	SECTION DESCRIPTION
1.0	PROJECT MANAGEMENT	This section explains the overall project management.
1.1	TITLE PAGE AND APPROVAL	Description of Project Title, organizations, and responsible staff.
1.2	TABLE OF CONTENTS	Table of Contents list the sections and sub-sections included in the QAPP.
1.3	CONTRACT INFORMATION	List the contact staff, organization, and phone numbers.
1.4	PROJECT ORGANIZATION AND RESPONSIBILITY	Identify the project organization and the responsible entities who will ensure the QAPP procedures will be followed.
1.5	PROJECT OBJECTIVES AND APPROACH	Describe the objective based on the goal defined in the Conditional Waiver. Describe the approaches to meet the objectives.
1.5.1	<i>Measurement</i>	Describe the constituents that will be monitored.
1.5.2	<i>Project Schedule</i>	Identify when field studies will take place, the frequency of sampling, and when the field studies end.
1.6	QUALITY OBJECTIVES AND CRITERIA FOR DATA MEASUREMENT	Describe the quality objectives and criteria for data measurement. Refer to Quality Control Requirements listed in this document.
1.7	TRAINING AND CERTIFICATION	Describe the procedures for training field and laboratory staff.
1.8	DOCUMENTATION AND RECORDS	Describe the documentation procedure and record keeping for the monitoring program.
1.8.1	<i>Data to be Included in Reports</i>	List the laboratory and field data that will be included in the report.
1.8.2	<i>Reporting Format</i>	Explain what type of data will be included in the final report. Describe how the data that didn't meet the quality objectives will be qualified (e.g., estimated, usable, unusable).
2.0	DATA ACQUISITION	This section describes the sampling design and sample collection criteria
2.1	SAMPLING DESIGN	Describe the sampling design.
2.2	RATIONALE FOR THE DESIGN	Describe the purpose of the study. State if the design is based on a statistical or judgmental data collection method.
2.2.1	<i>Procedure for locating and Selecting Environmental Samples</i>	Describe procedures for locating and selecting the monitoring site/location(s).
2.2.2	<i>Classification of Measurements as Critical</i>	All measurements shall be classified as critical. Describe the process that will ensure that data will undergo closer scrutiny during data review.
2.2.3	<i>Validation of any Nonstandard methods</i>	List the non-standard methods that will be used and describe the procedures to validate the method.
3.0	FIELD PROCEDURES	Describe the field procedures for the elements listed below. Refer to the Field Procedures (Section 3.0) to meet the requirements for this monitoring program.
3.1	SAMPLE COLLECTION METHODS	See Section 3.0 for criteria. Describe the project specific methods.
3.1.1	<i>Sample Storage, Preservation and Holding Times</i>	See Section 3.0 for criteria. Describe the project specific procedures.
3.1.2	<i>Sample Identification Scheme</i>	See Section 3.0 for criteria. Describe the project specific procedures.
3.1.3	<i>Field Measurements</i>	See Section 3.0 for criteria. Describe the project specific methods of field measurement.
3.1.4	<i>QC Sample Collection</i>	See Section 3.0 for criteria. Describe the project specific quality control samples.
3.1.5	<i>Field Instrument Calibration</i>	See Section 3.0 for criteria. Describe the project specific methods of calibration.
3.1.6	<i>Decontamination Procedures</i>	See Section 3.0 for criteria. Describe the project specific documentation procedure.
3.1.7	<i>Field Documentation</i>	See Section 3.0 for criteria. Describe the project specific field documentation procedure.
3.2	SAMPLE CUSTODY AND DOCUMENTATION	This section describes the sample custody and documentation procedures.
3.2.1	<i>Documentation Procedures</i>	Describe the field documentation procedures.
3.2.2	<i>Chain-of-Custody Procedures and Form</i>	See Section 3.0 for criteria. Describe the Chain of Custody procedures.
3.2.3	<i>Sample Shipments and Handling</i>	See Section 3.0 for criteria. Describe the sample shipment procedure. How the samples will be delivered from the field to the laboratory.
3.2.4	<i>Laboratory Custody Procedures</i>	See Section 3.0 for criteria. Describe the project laboratory custody procedures.
4.0	ANALYTICAL METHOD REQUIREMENTS	This section describes the analytical method requirements.
4.1	CHEMISTRY ANALYSIS	Describe the chemistry analyses procedure, reference the published method, and identify the quantitation procedures.
4.2	TOXICITY TESTING	Describe the toxicity testing method and procedure, species, and reference the published methods being followed.
4.3	DETECTION AND QUANTITATION LIMITS	Describe the detection and quantitation limits for all constituents. See

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SECTION NUMBER	SECTION NAME	SECTION DESCRIPTION
		Section 4.0 for requirements.
4.4	LABORATORY STANDARD AND REAGENTS	Describe the reagents used in the laboratory and how they are checked for the quality.
4.5	SAMPLE PREPARATION PROCEDURES	Describe the sample preparation procedure and the reference method for each analytical method used and every constituent being monitored
5.0	QUALITY CONTROL REQUIREMENTS	This section describes the laboratory and field quality control. Laboratory and field sampling SOP should be provided to include the detail information.
5.1	DATA QUALITY OBJECTIVES AND QUALITY ASSURANCE OBJECTIVES	Describe the precision, accuracy, comparability, and completeness criteria for this project. See Section 5.0 for required information.
5.2	DEVELOPMENT OF PRECISION AND ACCURACY	Provide information on how the precision and accuracy will be developed for this project. See Section 5.0 for required information.
5.3	INTERNAL QUALITY CONTROL SAMPLES	Describe and list the internal QC samples, the frequency and acceptance criteria.
5.4	FIELD QUALITY CONTROL SAMPLES	Describe and list the type of field QC samples, the frequency of collection, and the acceptance criteria.
5.5	LABORATORY QUALITY CONTROL SAMPLES	Describe the laboratory QC samples and the frequency of analyses.
6.0	INSTRUMENTATION AND EQUIPMENT PREVENTATIVE MAINTENANCE	This section describes the instrumentation and preventive maintenance.
6.1	SAMPLE EQUIPMENT CLEANING PROCEDURES	Describe the sampling equipment cleaning procedures.
6.2	ANALYTICAL INSTRUMENT AND EQUIPMENT TESTING PROCEDURES AND CORRECTIVE ACTIONS	List the analytical instrument, manufacturer, maintenance procedure, and corrective actions when instruments are not operating within the required operating limits.
6.3	INSTRUMENT CALIBRATION AND FREQUENCY	This section describes the instrument calibration procedures and frequency of calibration
6.3.1	<i>Analytical Procedures and Calibration</i>	Describe the calibration procedure and frequency for each analytical method used in this monitoring program. Refer to Section 6.0 to follow the required procedure.
7.0	DATA MANAGEMENT	Describe the data management procedure. Where the original data will be kept, who receive the copy of the data, and who is responsible for maintaining the database.
7.1	DATA ASSESSMENT PROCEDURES	How the data will be assessed and what tools will be used to assess the data.
7.1.1	<i>Training and Certification</i>	Describe the training requirements for the field and laboratory staff.
7.1.2	<i>Data to be included in the Report</i>	Specify the data that will be included in the monitoring report. See Section 7.0 for requirements
8.0	DATA VALIDATION AND USABILITY	This section describes the data validation and usability.
8.1	LABORATORY DATA REVIEW, VERIFICATION AND REPORTING	Describe the laboratory procedure for data review and validation prior to release of the data.
9.0	REFERENCES	List all the references used to prepare the QAPP.
	ATTACHMENTS	List and enclose the attachments required. (e.g., Laboratory Quality Assurance Manual and SOPs).

In order to provide some technical information in preparing the QAPP, Sections 3.0 through 8.2.3 of the QAPP listed in Table No.1 are discussed in more detail below.

These sections focus primarily on the quality assurance and quality control components of the field and laboratory procedures. The section numbers provided below correspond to the Table No. 1 section numbers and section titles for ease of use.

## SECTION 3.0 FIELD PROCEDURES

Surface water and sediment samples will be collected for chemical analyses and biological toxicity testing. While the primary focus will be the collection of samples for pesticide analyses, other constituents will be required as listed in the *Discharger Monitoring and Reporting Program*.

### Section 3.1 Sample Collection Methods

Proper sampling techniques must be used. Sampling procedure must be documented.

#### Section 3.1.1 Sample Storage, Preservation and Holding Times

Sample containers must be pre-cleaned and certified to be free of contamination according to the United States Environmental Protection Agency (U.S. EPA) specification for the appropriate methods.

#### Section 3.1.2 Sample Identification Scheme

All samples must be identified with a unique number to ensure that results are properly reported and interpreted. Samples must be identified such that the site, sampling location, matrix, sampling equipment and sample type (i.e., normal field sample or QC sample) can be distinguished by a data reviewer or user.

#### Section 3.1.3 Field Measurements

For all water bodies sampled, water quality parameters including pH, specific conductance, dissolved oxygen, and temperature must be measured prior to collecting samples for laboratory analyses.

#### Section 3.1.4 QC Sample Collection

Equipment blanks, field duplicates, and matrix spikes must be collected at a frequency of about 1 per 20 normal samples. Matrix spikes will be collected as, normal samples and will be spiked at the laboratory prior to sample preparation.

#### Section 3.1.5 Field Instrument Calibration

Routine field instrument calibration must be performed at least once per day prior to instrument use to ensure instruments are operating properly and producing accurate and reliable data. Calibration should be performed at a frequency recommended by the manufacturer.

#### Section 3.1.6 Decontamination Procedures

All field and sampling equipment that will contact samples must be decontaminated after each use in a designated area.

### Section 3.1.7 Field Documentation

All field activities must be adequately and consistently documented to ensure defensibility of any data used for decision-making and to support data interpretation. Pertinent field information, including (as applicable), the width, depth, flow rate of the stream, the surface water condition, and location of the tributaries must be recorded on the field sheets.

### Section 3.2 Sample Custody and Documentation

Sample custody must be traceable from the time of sample collection until results are reported. Sample custody procedures provide a mechanism for documenting information related to sample collection and handling.

#### Section 3.2.1 Documentation Procedures

A master sample logbook or field datasheets shall be maintained for all samples collected during each sampling event.

#### Section 3.2.2 Chain-of-Custody Form

A chain-of-custody (COC) form must be completed after sample collection and prior to sample shipment or release. The COC form, sample labels, and field documentation must be crossed checked to verify sample identification, type of analyses, number of containers, sample volume, preservatives and type of containers.

#### Section 3.2.3 Sample Shipments and Handling

All sample shipments are accompanied with the COC form, which identifies the contents. The original COC form accompanies the shipment and a copy is retained in the project file.

All shipping containers must be secured with COC seals for transportation to the laboratory. The samples must be placed with ice to maintain the temperature between 2-4 degrees C. The ice packed with samples must be sealed in zip lock bags and contact each sample and be approximately 2 inches deep at the top and bottom of the cooler. Samples must be shipped to the contract laboratories according to Department of Transportation standard.

#### Section 3.2.4 Laboratory Custody Procedures

The following sample control activities must be conducted at the laboratory:

- Initial sample login and verification of samples received with the COC form;
- Document any discrepancies noted during login on the COC;
- Initiate internal laboratory custody procedure;
- Verify sample preservation (e.g., temperature);
- Notify the project coordinator if any problems or discrepancies are identified; and

-Proper samples storage, including daily refrigerator temperature monitoring and sample security.

## SECTION 4.0 ANALYTICAL REQUIREMENTS

### Section 4.1 Chemistry Analyses

Pesticide analyses must be conducted on unfiltered (whole) fractions of the samples. Prior to the analysis of any environmental samples, the laboratory must have demonstrated the ability to meet the minimum performance requirements for each analytical method. Initial demonstration of laboratory capabilities includes the ability to meet the project specified quantitation limits (QL), the ability to generate acceptable precision and recoveries, and other analytical and quality control parameters as stated in this Guide. Analytical methods used for chemistry analyses must follow a published method and document the procedure for sample analyses in a laboratory standard operation procedure (SOP) for review and approval.

### Section 4.2 Toxicity Testing

The ambient water toxicity test results must provide a reliable qualitative prediction of impacts to in stream biota. At a minimum the toxicity testing will need to include the 4-day static renewal procedures described in Method for Measuring Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (US EPA, 2002).

### Section 4.3 Detection and Quantitation Limits

#### Method Detection Limit Studies

Each laboratory performing analyses under this program must routinely conduct method detection limit (MDL) studies to document that the MDLs are less than the project-specified QLs. If any analytes have MDLs that do not meet the project QLs, the following steps must be taken:

1. Perform a new MDL study using concentrations sufficient to prove analyte quantitation at concentrations less than the project-specified QLs per the procedure for the Determination of the Method Detection Limit presented in Revision 1.1," 40 Code of Federal Regulations (CFR) 136, 1984.
2. No samples may be analyzed until the issue has been resolved. MDL study results must be available for review during audits, data review, or as requested. Current MDL study results must be reported at the beginning of every project for review and inclusion in project files.

An MDL is developed from seven aliquots of a standard containing all analytes of interest spiked at five times the expected MDL, which are taken through the analytical method sample processing steps. The data are then evaluated and used to calculate the MDL. If the calculated MDL is less than three times below the spiked concentration, another MDL study must be performed using a lower concentration

#### Project Quantitation Limits

Laboratories generally establish QLs that are reported with the analytical results; these may be called reporting limits, detection limits, reporting detection limits, or other terms. These laboratory limits

must be less than or equal to the project QLs. Project QLs must be lower than the proposed or existing numeric water quality objectives by the Regional Board. The laboratories must have documentation to support quantitation at the required levels.

Laboratories must report analytical results between the MDL and QL. These results must be reported as numerical values and qualified as estimates. Reporting as "trace" or "<QL" is not acceptable.

Sample results less than MDLs will be reported only for GC/MS analyses if the mass spectral fingerprint can prove positive identification; these results must be qualified as estimated values by the laboratory.

#### Section 4.4 Laboratory Standards and Reagents

All stock standards and reagents used for extraction and standard solutions must be tracked through the laboratory. The preparation and use of all working standards must be recorded in bound laboratory notebooks that document standard tractability to U.S. EPA, A2LA or National Institute for Standards and Technology (NIST) criteria. Records must have sufficient detail to allow determination of the identity, concentration, and viability of the standards including any dilutions performed to obtain the working standard. Date of preparation, analyte or mixture, concentration, name of preparer, lot or cylinder number, and expiration date, if applicable, must be recorded on each working standard.

#### Section 4.5 Sample Preparation Methods

Surface water and sediments samples will be prepared in solvent or via other extraction techniques prior to sample analyses. All procedures must follow a published method. The sample preparation procedure must be documented and included in the monitoring plan for review and approval.

### SECTION 5.0 QUALITY CONTROL REQUIREMENTS

The types of quality control assessments required in the monitoring program are discussed below. Detailed procedures for preparation and analysis of quality control samples must be provided in the analytical method documents or Standard Operating Procedures (SOP) by the analytical laboratories for approval.

#### Section 5.1 Quality Assurance Objectives (QAOs)

Quality assurance objectives are the detailed QC specifications for precision, accuracy, representativeness, comparability, and completeness (PARC). The QAOs are then used as comparison criteria during data quality review by the group that is responsible for collecting data to determine if the minimum requirements have been met and the data may be used as planned.

#### Section 5.2 Development of Precision and Accuracy Objectives

Laboratory control spikes (LCSs) are used to determine the precision and accuracy objectives. The laboratory fortifies the LCSs with target compounds to monitor the laboratory precision and accuracy.

Field duplicates measure sampling precision and variability for comparison of project data. Acceptable relative percent difference (RPD) is less than 25 for field duplicate analyses. If field duplicate sample results vary beyond these objectives, the results are qualified.

### Section 5.3 Internal Quality Control (QC)

Internal quality control (QC) is achieved by collecting and/or analyzing a series of duplicate, blank, spike, and spike duplicate samples to ensure that analytical results are within the specified QC objectives. The QC sample results are used to quantify precision and accuracy and identify any problem or limitation in the associated sample results. The internal QC components of a sampling and analyses program will ensure that the data of known quality are produced and documented. The internal QC samples, frequency, acceptance criteria, and corrective action must meet the minimum requirements presented in the following sections.

### Section 5.4 Field Quality Control

Field QC samples are used to assess the influence of sampling procedures and equipment used in sampling. They are also used to characterize matrix heterogeneity.

For basic water quality analyses, quality control samples to be prepared in the field will consist of equipment blanks, field duplicates, and matrix spikes (when applicable). The number of field duplicates and field blanks are set to achieve an overall rate of at least 5% of all analyses for a particular parameter. The external QA samples are rotated among sites and events to achieve the overall rate of 5% field duplicate samples and 5% equipment blanks (as appropriate for specific analyses).

#### Equipment Blanks

Equipment blanks will be collected and analyzed for all analytes of interest along with the associated environmental samples. Equipment blanks will consist of laboratory-prepared blank water (certified contaminate free) processed through the sampling equipment using the same procedures used for environmental samples.

#### Field Duplicates

Field duplicates will be collected at the rate of one per sampling event, and analyzed along with the associated environmental samples. Field duplicates will be collected at the same time as environmental samples or of two grab samples collected in rapid succession. If the relative percent difference (RPD) of field duplicate results is greater than 25% and the absolute difference is greater than the RL, both samples should be reanalyzed.

#### Matrix Spikes and Matrix Spike Duplicates

Matrix spikes and matrix spike duplicates will be analyzed at the rate of one pair per sample batch. Matrix spike samples are collected at the same time as the environmental samples and are spiked at the laboratory. Laboratory acceptance criteria should be submitted to the Regional Board staff for review and approval as part of the development and approval of the Scope of Work for monitoring.

### Section 5.5 Laboratory Quality Control

For basic water quality analyses, quality control samples prepared in the contract laboratory will typically consist of method blanks, laboratory control samples, laboratory duplicates, and surrogate added to each sample (organic analysis).

#### Method Blanks

Method blanks will be prepared and analyzed by the contract laboratory with each batch of samples. If any analyte is detected in the blank, the blank and the associated samples must be re-extracted and re-analyzed.

#### Laboratory Control Samples and Surrogate

Laboratory control samples (LCS) will be analyzed at the rate of one per sample batch. Surrogate may be added to samples for organic analyses. Laboratory acceptance criteria must be submitted to Regional Board staff for review and approval as part of the development and approval of the monitoring plan.

## SECTION 6.0 INSTRUMENTATION AND EQUIPMENT PREVENTIVE MAINTENANCE

### Section 6.1 Sample Equipment Cleaning Procedures

Equipment used for sample collection must be cleaned according to the specific procedures documented in each sampling SOP. Sampling SOP will be prepared by the group responsible for sampling and will be submitted to Regional Board for review and approval as part of the monitoring plan.

### Section 6.2 Analytical Instrument and Equipment Testing Procedures and Corrective Actions

Testing, inspection, maintenance of analytical equipment used by the contract laboratory, and corrective actions shall be documented in the quality assurance manuals for each analyzing laboratory. Laboratory Quality Assurance Manual must be submitted to Regional Board for review and approval prior to start of sampling and analyses.

### Section 6.3 Instrument Calibrations and Frequency

#### Section 6.3.1 Analytical Procedures and Calibration

This section briefly describes analytical methods and calibration procedures for samples that will be collected under this monitoring program.

Analytical methods that will be used in this program will need to follow the general guidance of any of the following methods:

- *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater* (EPA-600/4-85/054)
- *U.S. EPA Methods for Chemical Analysis of Water and Wastes* (EPA-600/4-79-020, third edition, 1983)
- *Methods for Determination of Organic Compounds in Drinking Water* (EPA-600/4-88/039)
- *Standard Methods for the Examination of Water and Wastewater*
- *USEPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. Office of Water, Washington, D.C. EPA-821-R-02-01*
- *USEPA. 2002. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition. Office of Water, Washington, D.C. EPA-821-R-02-013*
- *USEPA. 1994. Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates. Office of Research and Development, Washington, D.C. EPA-600-R-94-024*

For this program, only linear calibration with either an average response factor or a linear regression is acceptable for organic analyses. Non-linear calibration is not allowed since using this calibration option creates a potential for poor quantitation or biased concentrations of compounds at low or high concentrations (near the high and low ends of the calibration range).

Laboratories shall prepare an initial 5-point calibration curve, where the low level standard concentrations is less than or equal to the analyte quantitation limits

## SECTION 7.0 DATA MANAGEMENT

Copies of field logs, a copy of COC forms, original preliminary and final lab reports, and electronic media reports must be kept for review by the Regional Board Staff. The field crew must retain original field logs. The contract laboratory shall retain original COC forms. The contract laboratory will retain copies of the preliminary and final data reports.

Concentrations of chemicals and toxicity endpoints, and all numerical biological parameters shall be calculated as described in the referenced method document for each analyte or parameter, or laboratory operating procedures. The data generated shall be converted to a standard database format maintained

by the responsible party and available for the Regional Board staff review. After data entry or data transfer procedures are completed for each sample event, data should be inspected for data transcription errors, and corrected as appropriate. After the final QA checks for errors are completed, the data should be added to the final database.

#### Section 7.1 Data Assessment Procedures

Data must be consistently assessed and documented to determine whether project quality assurance objectives (QAOs) have been met, quantitatively assess data quality and identify potential limitations on data use. Assessment and compliance with quality control procedures will be undertaken during data collection phase of the project.

##### Section 7.1.1 Training and Certification

All staff performing field or laboratory procedures shall receive training to ensure that the work is conducted correctly and safely. At a minimum, all staff shall be familiar with the field guidelines and procedures and the laboratory SOP included in the project QAPP.

##### Section 7.1.2 Data to be Included in Data Reports

For each sampling event, the field team or monitoring agency shall provide the Project Lead Staff with copies of the field data sheets (relevant pages of field logs) and copies of the COC forms for all samples submitted for analysis. At minimum, the following sample-specific information must be provided for each sampling program to the Regional Board staff:

- Sample Identification
- Monitoring location
- Sample type, e.g. grab or composite type (Cross-sectional, flow-proportional, etc.)
- QC sample type and frequency
- Date and time(s) of sample collection
- Requested analyses (specific parameters or method references)
- Results of samples collected and all laboratory QC samples (calibrations, blanks, surrogates, laboratory spikes, matrix spikes, reference materials, etc.) and the identification of each analytical sample batch.

##### Section 7.1.3 Reporting Format

All results meeting data quality objectives and results having satisfactory explanations for deviations from objectives shall be reported on the Laboratory Final Report. The final results shall include the results of all field and laboratory quality control samples.

## SECTION 8.0 DATA VALIDATION AND USABILITY

### Section 8.1 Laboratory Data Review, Verification, and Reporting

The laboratory quality assurance manual must be used to accept, reject or qualify the data generated by the laboratory. The laboratory management will be responsible for validating the data generated by the laboratory.

The laboratory personnel must verify that the measurement process was “in control” (i.e., all specified data quality objectives were met or acceptable deviations explained) for each batch of samples before proceeding with analysis of a subsequent batch. In addition, each laboratory will establish a system for detecting and reducing transcription and/or calculation errors prior to reporting data.

Only data, which have met data quality objectives, or data, which have acceptable deviations explained will be submitted by the laboratory. When QA requirements have not been met, the samples will be reanalyzed when possible and only the results of the reanalysis will be submitted, provided they are acceptable.

## 9.0 REFERENCES

U.S. EPA 2001. Laboratory Documentation Requirements for Data Evaluation (R9QA/004.1)

U.S. EPA. 1983. Methods for Chemical Analysis of Water and Wastes. EPA-600/4-79-020, third edition

U.S. EPA. 1988. Methods for Determination of Organic Compounds in Drinking Water (EPA-600/4-88/039)

USEPA. 2002. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition. Office of Water, Washington, D.C. EPA-821-R-02-012

USEPA. 2002. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition. Office of Water, Washington, D.C. EPA-821-R-02-013

USEPA. 1994. Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates. Office of Research and Development, Washington, D.C. EPA-600-R-94-024